

OXFORD

NEW

THIRD EDITION

COUNTDOWN

ENHANCED BLENDED EDITION

Step by Step Solutions



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SPACE FOR TV

Preface

When children enter school, most of them have a certain amount of fascination for numbers and shapes. Quite often, however, this fascination is short-lived as they face difficulty in understanding facts and concepts in the classroom. This leads to rote learning which is devoid of any real joy and as a consequence most students drift away from the subject. The root cause for this unfortunate situation is lack of practical work, both inside and outside the classroom, and teaching from textbooks that do not excite a child's mind.

This successful series has always aimed to increase this fascination for numbers in young minds by introducing mathematical skills to them in a manner in which they are encouraged to use as many senses as possible including hearing, seeing, and doing. As a result, they get a sense of discovery and excitement as they move from one level of knowledge to the next and in this way enhance their problem-solving and thinking skills too.

This revised **New Countdown** reinforces this objective by presenting the magic of numbers in a friendly, fun-filled way (the Play-way Method) where children hear, see, and touch everyday objects, ask questions and get answers, and end up working in the books. Illustrated with child-centred, cheerful pictures, and engaging activities, this book promises to create a 'learning environment' rather than a 'teaching' one for the child.

New Countdown Third Edition is a carefully structured and graded mathematics course comprising eight books from the three levels of pre-primary to class 5. The pattern followed in the entire series ensures development in all areas of a child's growth through basic multi-focal knowledge, emphasising number skills, and mathematical concepts. It conforms to the broad guidelines set by all major syllabi.

Key features

- ▶ Specific learning objectives and key mathematical vocabulary are listed at the beginning of each chapter
- ▶ Clear presentation of key mathematical concepts
- ▶ Integration of concepts and their application in real-life situations
- ▶ Solved examples of all concepts
- ▶ Colourful illustrations and photographs supplement explanations
- ▶ Practice exercises offer ample reinforcement of concepts
- ▶ Challenge and Maths Champ features offers challenging questions
- ▶ Mindbender puzzles create additional interest in the topics
- ▶ Important information and learning tips are provided under the headings: Note, Remember, Quick Reference, Do you know, Hint, Important, and Mathema-Trick
- ▶ Fun Activities are used to make the subject interesting

BOOK 2

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Specific Learning Objectives for Grade II

Whole numbers	
Ordinal numbers	<ul style="list-style-type: none"> • Write ordinal numbers from first to twentieth • Write numbers 1-100 in words
Numbers up to 100	<ul style="list-style-type: none"> • Read numbers up to 999 • Write numbers up to 999 as numerals • Recognise the place value of a 3-digit number • Identify the place value of a specific digit in a 3-digit numbers • Compare 2-digit numbers with 3-digit numbers (hundreds, tens and ones) • Compare 3-digit numbers with 3-digit numbers (hundreds, tens and ones) • Count backward ten steps down from any given number • Arrange numbers up to 999, written in mixed form, in increasing or decreasing order • Count and write in 10s (e.g. 10, 20, 30, ...) • Count and write in 100s (e.g. 100, 200, 300, ...) • Identify the smallest/largest number in a given set of numbers • Recognise that 1000 is one more than 999 and the first 4-digit number
Number Operations	
Addition of 2-digit numbers (with carrying)	<ul style="list-style-type: none"> • Add ones and ones • Add ones and 2-digit numbers with carrying • Add 2-digit numbers and 2-digit numbers with carrying • Solve real life number stories, involving addition of 2-digit numbers with carrying
Addition of 3-digit numbers (without carrying)	<ul style="list-style-type: none"> • Add 3-digit number and ones without carrying • Add 3-digit number and 2-digit number without carrying • Add 3-digit number and 3-digit number without carrying • Solve real life number stories involving addition of 3-digit numbers without carrying
Addition of 3-digit numbers (with carrying)	<ul style="list-style-type: none"> • Add 3-digit number and 1-digit number with carrying of tens and hundreds • Add 3-digit number and 2-digit number with carrying of tens and hundreds • Add 3-digit numbers with 3-digit numbers with carrying of tens and hundreds • Solve real life number stories involving addition of 3-digit numbers with carrying of tens and hundreds

Subtraction of 2-digit numbers (with borrowing)	<ul style="list-style-type: none"> • Subtract 1-digit number from 2-digit numbers with borrowing • Subtract 2-digit numbers from 2-digit numbers with borrowing • Solve real life number stories of subtraction of 2-digit numbers with borrowing
Subtraction of 3-digit numbers (without borrowing)	<ul style="list-style-type: none"> • Subtract 1-digit from 3-digit number without borrowing • Subtract 2-digit number from 3-digit number without borrowing • Subtract 3-digit numbers from 3-digit numbers without borrowing • Solve real life number stories of subtraction up to 3 digits without borrowing
Subtraction of 3-digit numbers (with borrowing)	<ul style="list-style-type: none"> • Subtract 1-digit number from 3-digit number with borrowing • Subtract 2-digit number from 3-digit number with borrowing • Subtract 3-digit number from 3-digit number with borrowing • Solve real life number stories of subtraction up to 3 digits with borrowing • Analyse simple situations identifying correct operation of addition and subtraction with carrying/borrowing in mixed form
Multiplication	<ul style="list-style-type: none"> • Recognise multiplication as repeated addition (e.g. $2+2+2=6$ is equivalent to 3 times $2 = 6$ and $3 \times 2 = 6$) and use multiplication symbol "x" • Complete number sequences in steps of 2,3,4,5 and 10 (e.g. in steps of 2 the sequence is expressed as 2,4, 6...) • Develop multiplication tables of 2,3,4,5 and 10 till the multiplication of 10×10 • Multiply numbers within multiplication table • Write number sentence for multiplication from the picture such as $2 \times \square = 6$ • Solve number stories on multiplication up to 1-digit numbers.
Division	<ul style="list-style-type: none"> • Recognise and use division symbols \div. • Recognise division as successive subtraction • Divide numbers within the multiplication tables with remainder zero • Solve number stories involving division up to 1-digit numbers
Addition, Subtraction, Multiplication and Division	<ul style="list-style-type: none"> • Solve real life situations (using Pakistani currency as well) involving addition, subtraction, multiplication, and division. Give reasons for choosing the correct operation

Fractions

Fractions

- Recognise fractions as equal parts of a whole
- Identify half, one third and quarter with the help of objects and figures (without writing $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$)
- Represent half, one third and quarter in numerical form ($\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$)
- Shade the equal parts of a given figure to match a given fraction
- Recognise and name unit fractions up to $\frac{1}{10}$.
- Recognise fractions like two thirds ($\frac{2}{3}$), three fourths ($\frac{3}{4}$), four fifths ($\frac{4}{5}$), up to nine tenths ($\frac{9}{10}$)

Measurement: Length, Mass, and Capacity

Length

- Compare the lengths of different objects.
- Recognise the units of length (meter and centimeter)
- Use standard metric units of length (meter and centimeter) and their abbreviation to measure and record lengths of variety of objects.
- Use addition and subtraction within 100 to solve real life situations involving lengths in same units

Mass

- Compare the mass of different objects.
- Recognise the units of mass, i.e. kilogram, gram
- Use standard metric units of mass (kilograms and grams) and their abbreviation to measure and record mass of variety of objects.
- Use addition and subtraction within 100 to solve real life situations involving mass in same units.

Capacity

- Compare capacity of different objects using nonstandard units (jug, glass, cup, etc.)
- Recognise and use the standard metric units of capacity, i.e. liter and milliliter
- Use addition and subtraction within 100 to solve real life situations involving capacity in same units.

Time	
Time	<ul style="list-style-type: none"> • Recognise the number of hours in a day and numbers of minutes in an hour • Read and write the time from a clock in hours and minutes (with five-minute intervals) e.g. read 8:15 as eight fifteen and 8:50 as eight fifty • Recognise a.m. and p.m. • Draw hands of a clock to show time in hours and minutes (with five minutes intervals) • Use solar calendar to find a particular date/day • Use Islamic calendar to find a particular date/day
Geometry	
Two dimensional figures	<ul style="list-style-type: none"> • Identify the figures like square, rectangle, triangle, circle, semi-circle, and quarter-circle • Identify vertices and sides of a triangle, rectangle and square
Straight lines and curves	<ul style="list-style-type: none"> • Differentiate between a straight line and a curve • Identify straight lines and curves from the given drawings • Use ruler to draw a straight line of given length (exclude fractional length)
Patterns	<ul style="list-style-type: none"> • Make/complete geometrical patterns on square grid according to one or two of the following attributes <ul style="list-style-type: none"> • Shape • Size • Orientation
Three dimensional (3D) objects	<ul style="list-style-type: none"> • Recognise and name 3D Objects (cubes, cuboids, cylinder, cone, sphere)



Whole Numbers

1. Look at the number crunchers. What number comes out at the other end? One is done for you.

a. $8 \rightarrow +9 \rightarrow -2 \rightarrow 15$

b. $12 \rightarrow -4 \rightarrow -2 \rightarrow +14 \rightarrow 20$

c. $24 \rightarrow -14 \rightarrow +2 \rightarrow +7 \rightarrow +20 \rightarrow 39$

d. $60 \rightarrow -50 \rightarrow +18 \rightarrow +2 \rightarrow 30$

e. $99 \rightarrow -90 \rightarrow -3 \rightarrow +5 \rightarrow +30 \rightarrow 41$

Do you remember?

2. Which way should hungry crocodile open his mouth?

REMEMBER  This crocodile likes to eat bigger numbers. 

a. 18  19

b. 14  24

c. 21  29

d. 76  81

e. 53  51

f. 40  51

g. 12  17

h. 100  99

i. 66  99

3. Write the number that comes...

a. ...before

b. ...after

c. ...between...

28, 29
53, 54
10, 11
69, 70
99, 100
37, 38
40, 41

34, 35
77, 78
29, 30
40, 39
16, 17
59, 60
12, 13

22, 23, 24
39, 40, 41
98, 99, 100
55, 56, 57
48, 49, 50
10, 11, 12
67, 68, 69

Putting in order

4. Put these numbers in ascending order.

a.

17 49
11 82
32 6

6, 11, 17, 32, 49, 82

b.

87 27
14 19
78 86

14, 19, 27, 78, 86, 87

c.

72 144
13 512
467 99

13, 72, 99, 144, 467, 512

d.

471 54
6 826
230 98

6, 54, 98, 230, 471, 826

5. Put these numbers in descending order.

a.

14 41
66 63
37 68

68, 66, 63, 41, 37, 14

b.

58 77
2 100
99 49

100, 99, 77, 58, 49, 2

c.

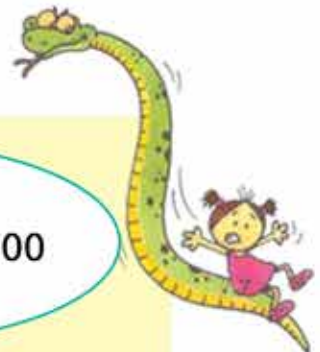
177 49
85 82
325 6

325, 177, 85, 82, 49, 6

d.

39 569
198 996
93 92

996, 569, 198, 93, 92, 39



Ordinal numbers

6. Write the ordinal numbers from 1st to 20th.

1st First

1st First

2nd Second

2nd Second

3rd Third

3rd Third

4th Fourth

4th Fourth

5th Fifth

5th Fifth

6th Sixth

6th Sixth

7th Seventh

7th Seventh

8th Eighth

8th Eighth

9th Ninth

9th Ninth

10th Tenth

10th Tenth

11th Eleventh

11th Eleventh

12th Twelfth

12th Twelfth

13th Thirteenth

13th Thirteenth

14th Fourteenth

14th Fourteenth

15th Fifteenth

15th Fifteenth

16th Sixteenth

16th Sixteenth

17th Seventeenth

17th Seventeenth

18th Eighteenth

18th Eighteenth

19th Nineteenth

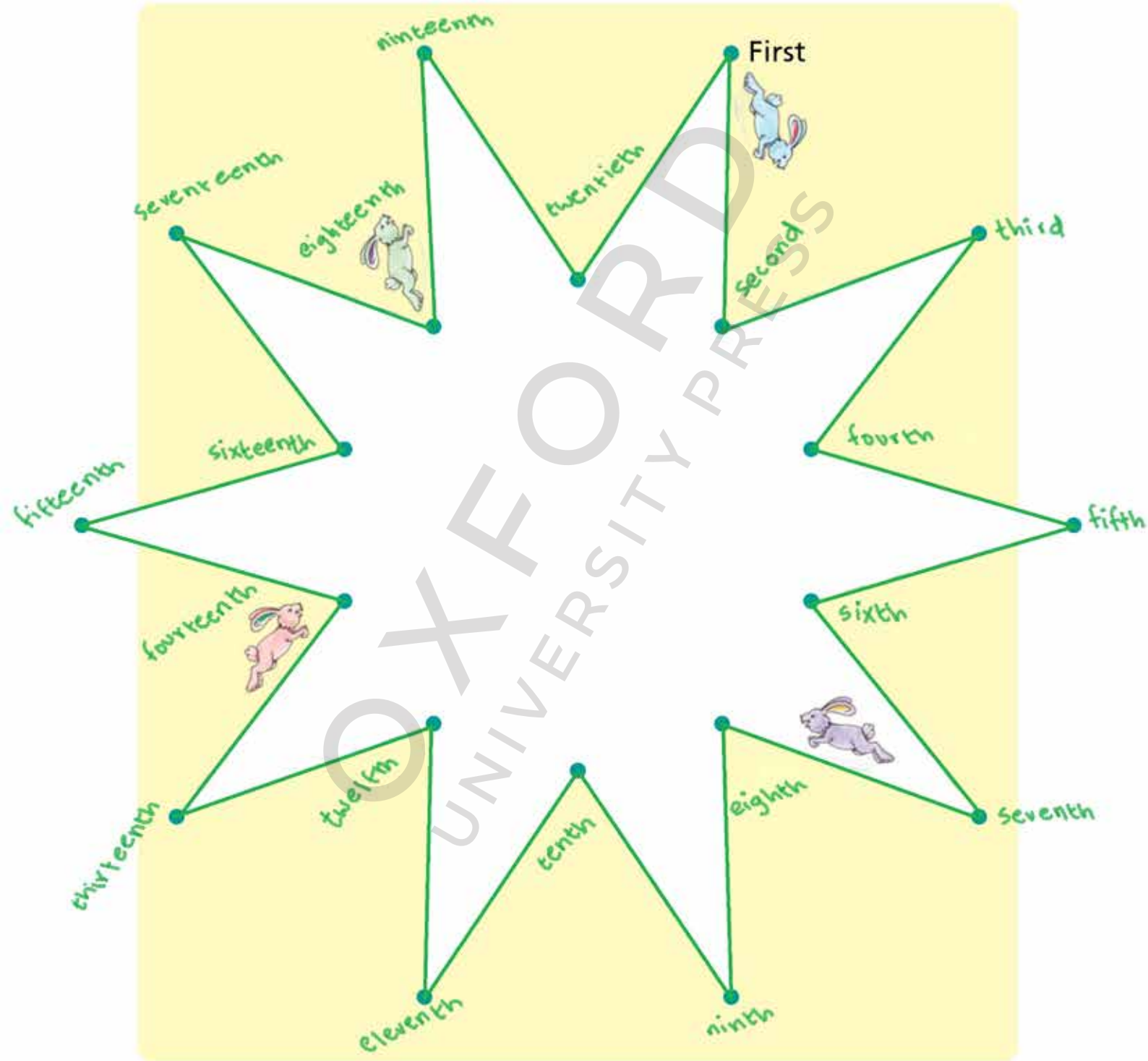
19th Nineteenth

20th Twentieth

20th Twentieth

Ordinal numbers

7. Join the dots to find the formation all the bunnies have made. Starting from the first, write the ordinal number to show the position of each bunny.



Place value

8. How many tens, how many ones? Count and write.

a.



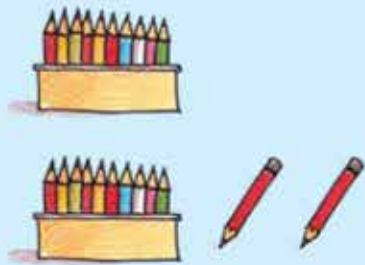
1 ten 3 ones = 13

b.



2 tens 6 ones =

c.



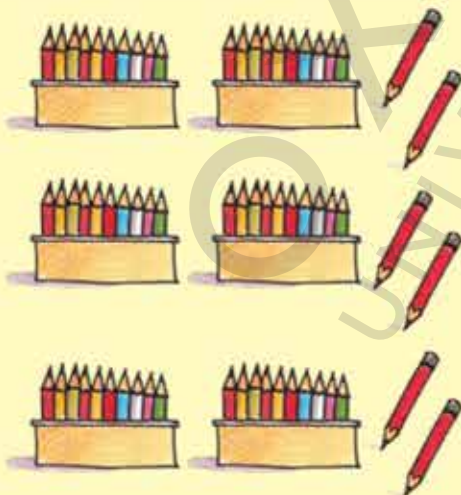
2 tens 2 ones =

d.



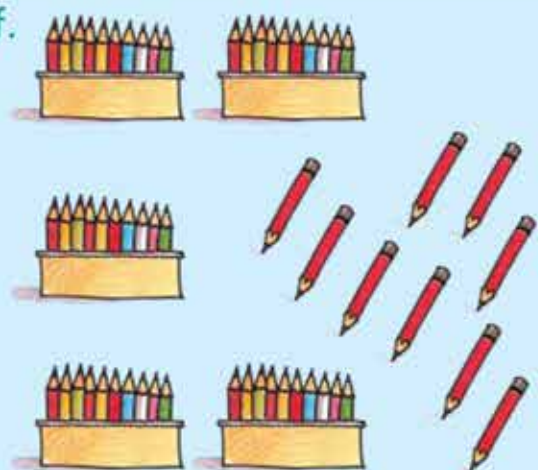
4 tens 4 ones =

e.



6 tens 6 ones =

f.



5 tens 9 ones =

Place value

9. Write the number according to the place values.

a. 3 tens and 6 ones = 36

b. 0 tens and 6 ones = 6

c. 5 tens and 3 ones = 53

d. 2 tens and 7 ones = 27

e. 8 tens and 0 ones = 80

f. 9 tens and 9 ones = 99

g. 6 tens and 8 ones = 68

h. 1 ten and 1 one = 11

10. Write in words.

a. 4 tens and 5 ones forty-five

b. 7 tens and 2 ones seventy-two

c. 3 tens and 9 ones thirty-nine

d. 8 tens and 4 ones eighty-four

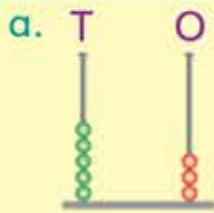
e. 2 tens and 8 ones twenty-four

f. 9 tens and 0 ones ninety

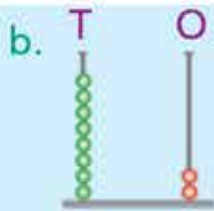
g. 5 tens and 7 ones fifty-seven

How many tens, how many ones?

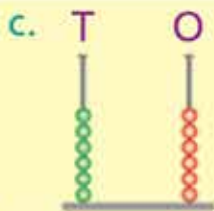
11. Look at the abacus, then fill in the empty boxes.



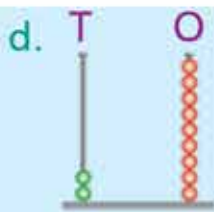
$$53 = 5 \text{ tens and } 3 \text{ ones} = 50 + 3$$



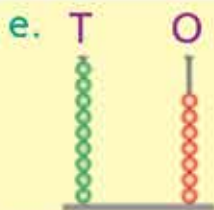
$$82 = 8 \text{ tens and } 2 \text{ ones} = 80 + 2$$



$$66 = 6 \text{ tens and } 6 \text{ ones} = 60 + 6$$



$$29 = 2 \text{ tens and } 9 \text{ ones} = 20 + 9$$



$$97 = 9 \text{ tens and } 7 \text{ ones} = 90 + 7$$

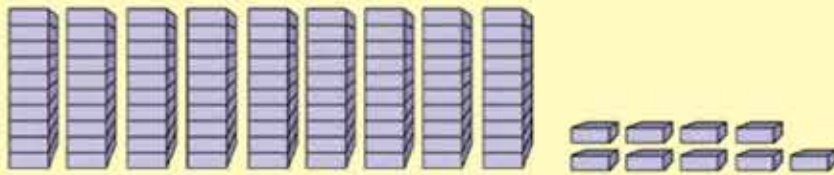
12. Write 63, 72, 55, 38, and 96 in:

a. ascending order 38, 55, 63, 72, 96

b. descending order 96, 72, 63, 55, 38

Remembering one hundred

Adil has 99 blocks ...



9 tens

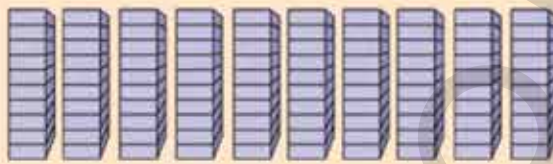
9 ones ...

and adds
1 more
block



1 ones

How many blocks does he have now?



10 tens

0 ones

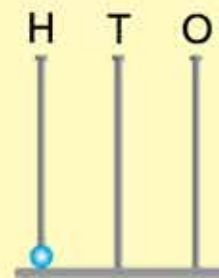
Adil has 10 tens and 0 ones

$10 \text{ tens and } 0 \text{ ones} = 100 = \text{one hundred}$

Adil writes 100 in columns like this:

hundreds	tens	ones
1	0	0

On his abacus, he shows 100 like this:



Hundreds, tens, and ones

1. Count and write.
Then draw beads on the abacus.

10 tens 1 hundred

a.

hundreds	tens	ones
1	1	3

113

b.

hundreds	tens	ones
1	3	7

137

c.

hundreds	tens	ones
2	1	2

212

d.

hundreds	tens	ones
2	4	1

241

e.

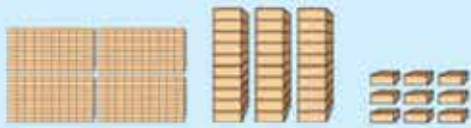
hundreds	tens	ones
3	1	8

318

Hundreds, tens, and ones

2. Count and write.

a.

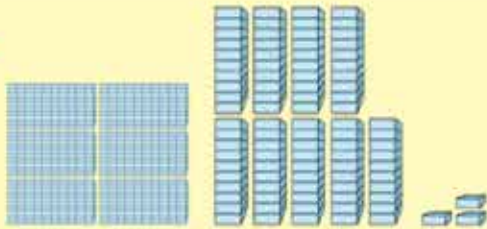


hundreds tens ones

4 3 9

439

b.

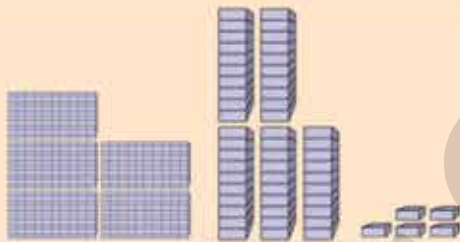


hundreds tens ones

6 3 9

639

c.

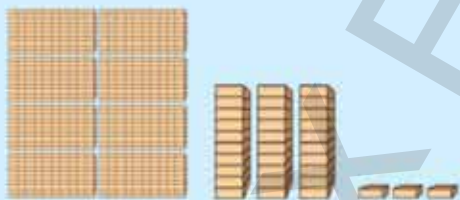


hundreds tens ones

5 5 5

555

d.

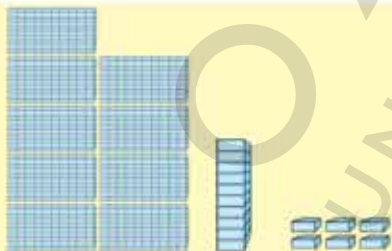


hundreds tens ones

8 3 3

833

e.

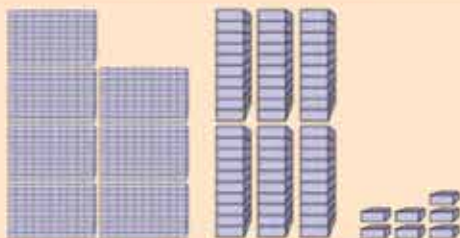


hundreds tens ones

9 1 6

916

f.



hundreds tens ones

7 6 7

767

Hundreds, tens, and ones

3. Write in hundreds, tens, and ones.
Then draw beads on the abacus.

a. H T O
113 1 hundred, 1 ten, 3 ones


b. H T O
841 8 hundred, 4 tens, 1 one


c. H T O
593 5 hundred, 9 tens, 3 ones


d. H T O
620 6 hundred, 2 tens

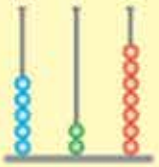

e. H T O
419 4 hundred, 1 ten, 9 ones

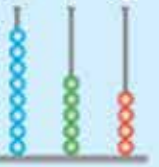

f. H T O
758 7 hundred, 5 ten, 8 ones

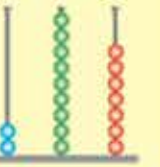

g. H T O
302 3 hundred, 2 ones

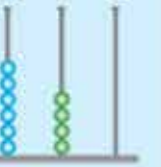

Hundreds, tens, and ones

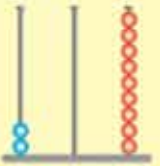
4. What number does each abacus show?
Write in the box.

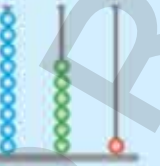
a. 
5 2 7

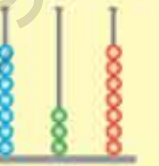
b. 
8 5 4

c. 
2 9 7

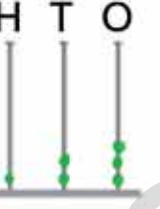
d. 
6 4 0


e. 
2 0 9

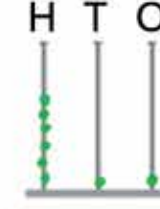
f. 
9 6 1

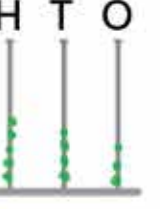
g. 
7 3 7


5. Draw beads on the abacus to show these numbers.

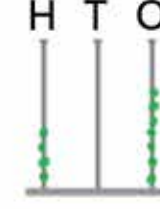
a. 
1 2 3

b. 
3 8 4

c. 
6 1 1

d. 
5 4 3

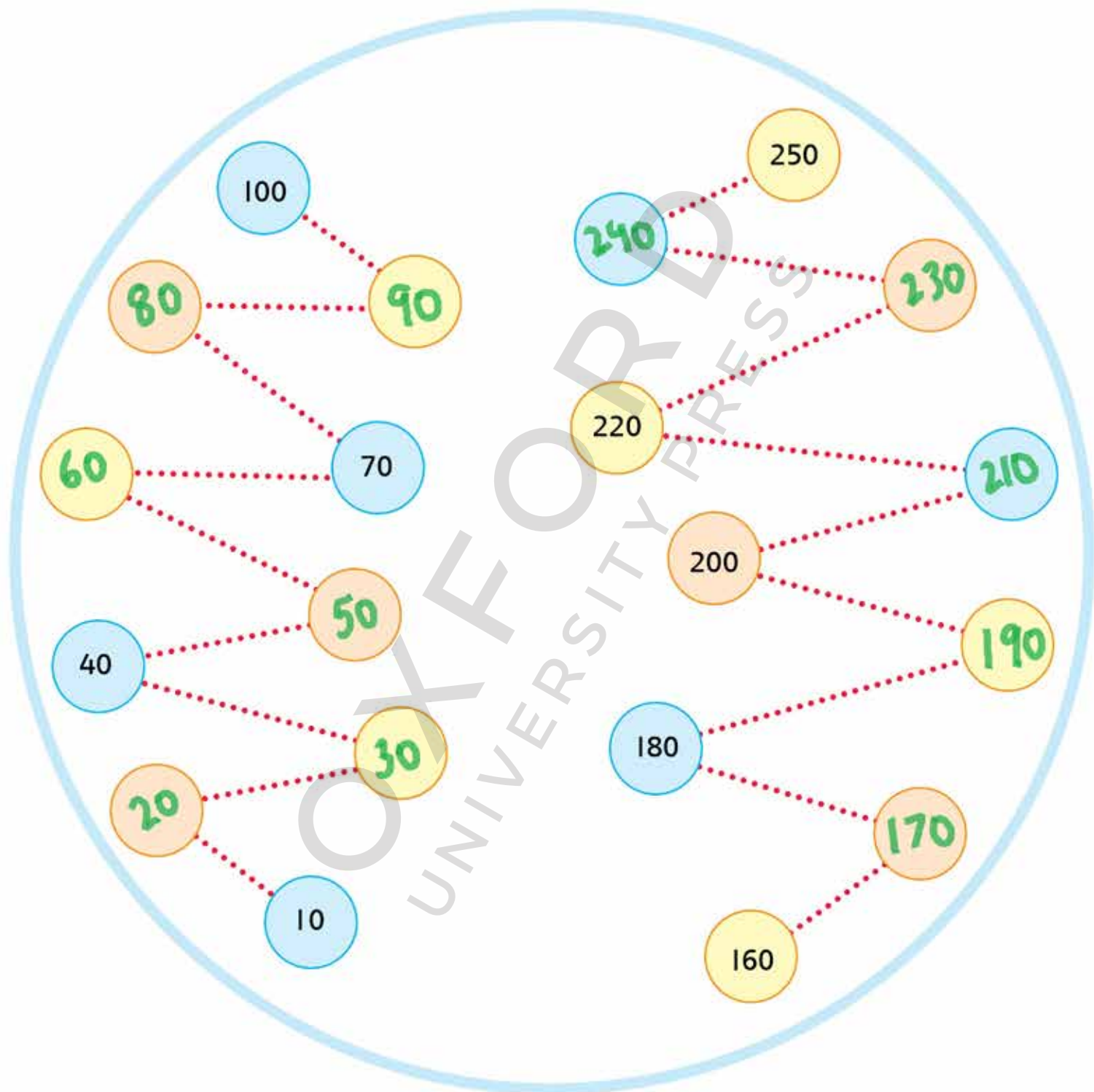
e. 
2 2 5

f. 
4 0 7

Number (backwards counting)

Do you remember backwards counting?

Let us count backwards in tens.



What is my name?

6. Given below are the numbers in hundreds. They have forgotten their names! Help them by writing their names in the box provided.

a.



three hundred

b.



five hundred

c.



one hundred

d.



eight hundred

e.



four hundred

f.



nine hundred

g.



six hundred

h.



two hundred

Numbers and number names

7. Write the number name.

- a. 640 six hundred and forty
- b. 223 two hundred and twenty three
- c. 497 four hundred and ninety seven
- d. 508 five hundred and eight
- e. 333 three hundred and thirty three
- f. 951 nine hundred and fifty one
- g. 785 seven hundred and eighty five

8. Now write the number.

a. Nine hundred and twenty-four **924**

b. One hundred and seventy-two **172**

c. Four hundred and thirty **430**

d. Six hundred and eighteen **618**

e. Seven hundred and fifty-six **756**

f. Eight hundred and five **805**

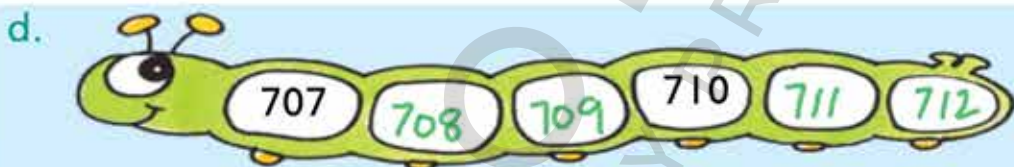
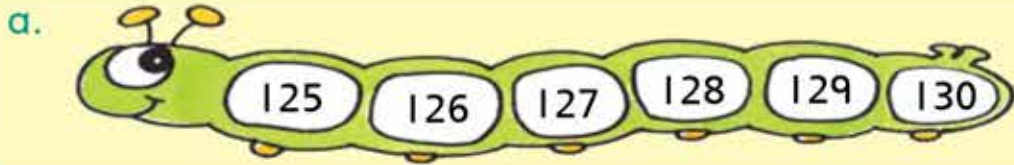
g. Three hundred and ninety-eight **398**

h. Five hundred and nineteen **519**

i. Two hundred and forty-seven **247**

Numbers up to 999: ordering

1. Some numbers are missing. Fill them in.



Numbers up to 999: ordering

2. Write the number that comes ...

a. ...before

341, 342

860, 861

305, 306

527, 528

429, 430

609, 610

99, 100

995, 996

796, 797

200, 201

584, 585

113, 114

749, 750

332, 333

898, 899

b. ...after

129, 130

634, 635

548, 549

499, 500

217, 218

349, 350

109, 110

909, 910

846, 847

799, 800

198, 199

208, 209

554, 555

607, 608

199, 200

c. ...between...

553, 554, 555

799, 800, 801

319, 320, 321

606, 607, 608

989, 990, 991

448, 449, 450

232, 233, 234

121, 122, 123

708, 709, 710

199, 200, 201

865, 866, 867

997, 998, 999

474, 475, 476

399, 400, 401

256, 257, 258

Numbers up to 999: less than, greater than

Comparing a 2-digit number with a 3-digit number

The hungry crocodile has found two numbers.

He wants to eat the greater one.

Which number is greater?

249

28

Crocodile knows that a number with more digits is always greater than the number with fewer digits.

So, the crocodile checks the number of digits in each number. The number 249 has 3 digits and 28 has 2 digits.

Therefore:

28



249

28 < 249

1. Write > or < in the empty boxes.

a. 35 < 548

b. 219 > 20

c. 92 < 589

d. 47 < 342

e. 981 > 81

f. 633 > 33

g. 809 > 79

h. 40 < 450

i. 34 < 481

j. 67 < 563

k. 819 > 92

l. 67 < 243

Numbers up to 999: less than, greater than

Comparing a 3-digit number with a 3-digit number

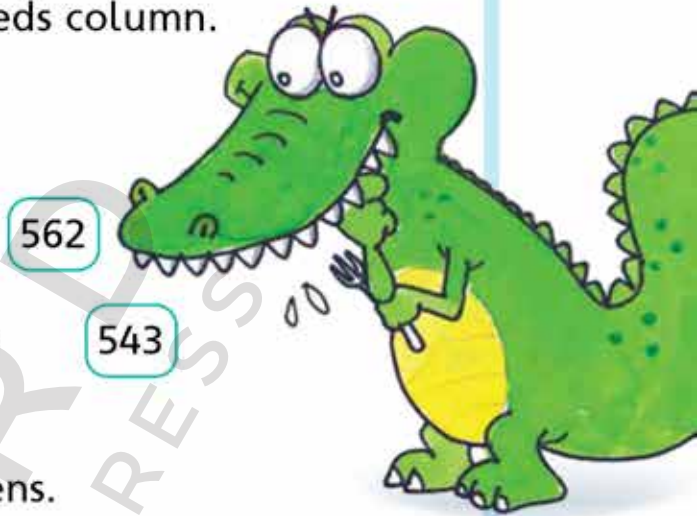
Still hungry, crocodile finds two more numbers.
Both numbers have 5 in the hundreds column.

H	T	O
5	6	2
5	4	3

Therefore, the crocodile checks the **tens column** next.
The top number has 6 in the tens.
The bottom number has 4 in the tens.
6 is greater than 4, so:

562 > 543





2. Fill in the symbol < or >.

a. 652 > 631

b. 848 < 851

c. 493 > 439

d. 386 < 390

e. 274 > 259

f. 371 < 394

g. 159 > 111

h. 998 > 988

i. 792 > 773

j. 496 < 582

k. 649 < 814

l. 339 < 514

REMEMBER



Check hundreds first, then tens.

Numbers up to 999: less than, greater than

The greedy crocodile has found two more numbers.

Both numbers have 3 in the hundreds column.

Both have 8 in the tens column.

Therefore, crocodile checks the **ones column** next.

H	T	O
3	8	6
3	8	9



The top number has 6 in the ones.

The bottom number has 9 in the ones.

9 is greater than 6, so:

386



389

386 < 389

3. Fill in the symbol < or >.

a. 496 > 492

b. 673 < 678

c. 548 > 547

d. 329 > 328

e. 991 > 990

f. 825 > 823

g. 547 > 536

h. 219 < 224

i. 381 < 389

j. 692 < 792

k. 841 > 759

l. 110 < 263

m. 786 > 781

n. 946 < 649

o. 482 < 490

Ascending and descending order

I. Help Tiger put these numbers in ascending order.

a.

431
849 900
871 624
573

431, 573, 624, 849, 871, 900

b.

729
692 901
750 687
748

687, 692, 729, 748, 750, 901

c.

329
420 710
600 571
338

329, 338, 420, 571, 600, 710

d.

998
908 997
980 890
809

809, 890, 908, 980, 997, 998



e.

624
738 783
599 629
621

599, 621, 624, 629, 738, 783

f.

164
193 146
139 379
397

139, 146, 164, 379, 397

The greatest number on this page.

998

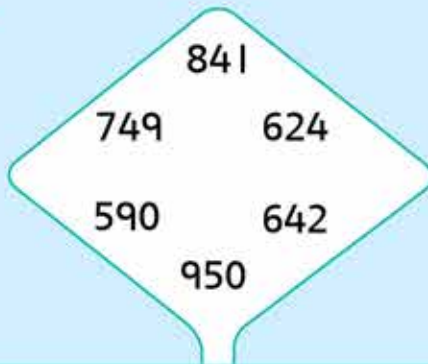
The smallest number on this page.

139

Ascending and descending order

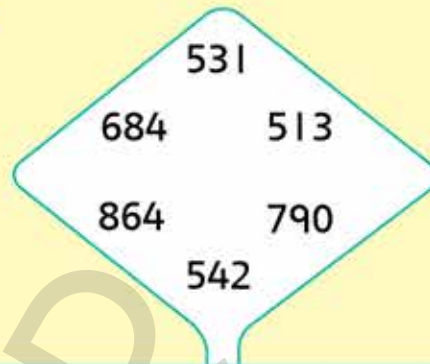
2. Now, help Tiger put these numbers in descending order.

a.



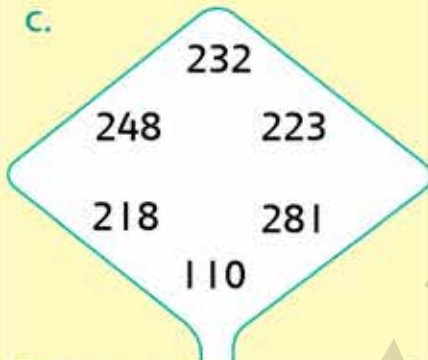
950, 841, 749, 642, 624, 590

b.



864, 790, 684, 542, 531, 513

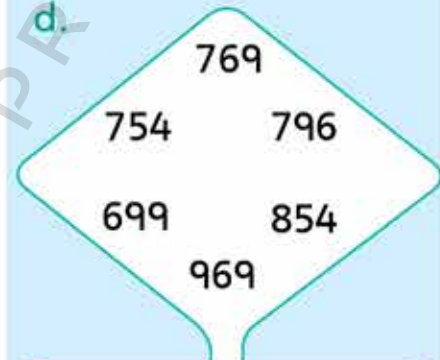
c.



281, 248, 232, 223, 218, 110

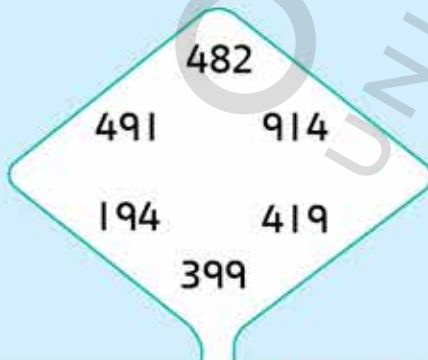


d.



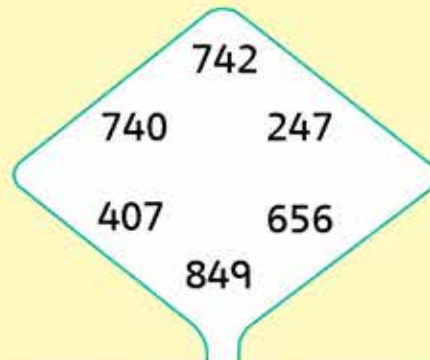
969, 854, 796, 769, 754, 699

e.



914, 491, 482, 419, 399, 194

f.



849, 742, 740, 656, 407, 247

Review: numbers

1. Write in hundreds, tens, and ones.

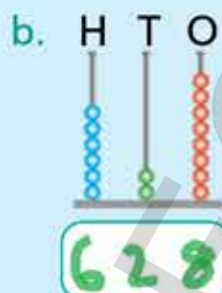
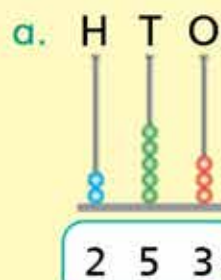
a. 351 3 hundreds, 5 tens, 1 one

b. 693 6 hundred, 9 tens, 3 ones

c. 409 4 hundreds, 9 ones

d. 984 9 hundreds, 8 tens, 4 ones

2. What number does the abacus show?



3. Write the numbers that are:

a. > 688 and < 695 689, 690, 691, 692, 693, 694

b. < 800 and > 790 799, 798, 797, 796, 795, 794, 793, 792, 791

c. < 554 and > 547 553, 552, 551, 550, 549, 548

4. Write $>$ or $<$ in the boxes.

a. 496 $>$ 492

b. 638 $>$ 599

c. 237 $>$ 231

d. 531 $>$ 351

e. 109 $<$ 190

f. 385 $<$ 496

5. Write the number name.

a. 209

two hundred and nine

b. 671

six hundred and seventy one

c. 840

eight hundred and forty

6. Write the number.

a. Three hundred and sixty-two

362

b. Five hundred and seven

507

c. Four hundred and twenty

420

7. Write in numbers.

a. 2 hundreds,
6 tens, 4 ones

264

b. 9 hundreds,
9 tens, 9 ones

999

c. 4 hundreds,
3 tens, 0 ones

430

d. 5 hundreds,
0 tens, 8 ones

508

e. 7 hundreds,
0 tens, 1 one

701

f. 3 hundreds,
5 tens, 2 ones

352

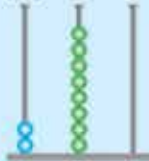
8. What number does the abacus show?

a. H T O



419

b. H T O



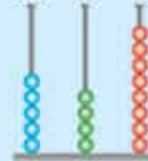
280

c. H T O



706

d. H T O



548

9. Write $>$ or $<$ in the empty boxes.

a. $492 > 381$

b. $284 > 291$

c. $673 > 573$

d. $829 < 928$

e. $361 < 363$

f. $169 > 162$

10. The triple centuries scored by cricketers over the years are: 322, 354, 318, 347, 368, 381, 392, 307.

a. Write these in ascending order.

307, 318, 322, 347, 354, 368, 381, 392



b. Now, write these in descending order.

392, 381, 368, 354, 347, 322, 318, 307



11. Write the number that comes...

a. ...before

b. ...after

c. ...between...

361, 362

416, 417

737, 738

118, 119

248, 249

337, 338

565, 566

274, 275

484, 485

362, 363

592, 593, 594

156, 157, 158

853, 854, 855

327, 328, 329

118, 119, 120



2

Addition

Addition of 2-digit numbers

1. Complete these sums.

$$\begin{array}{r} \text{T} \quad \text{O} \\ 8 \quad 1 \\ + 1 \quad 3 \\ \hline \end{array}$$

94

$$\begin{array}{r} \text{T} \quad \text{O} \\ 5 \quad 2 \\ + 2 \quad 2 \\ \hline \end{array}$$

74

$$\begin{array}{r} \text{T} \quad \text{O} \\ 4 \quad 7 \\ + 4 \quad 1 \\ \hline \end{array}$$

88

$$\begin{array}{r} \text{T} \quad \text{O} \\ 2 \quad 3 \\ + 5 \quad 6 \\ \hline \end{array}$$

79

$$\begin{array}{r} \text{T} \quad \text{O} \\ 1 \quad 5 \\ + 6 \quad 0 \\ \hline \end{array}$$

75

$$\begin{array}{r} \text{T} \quad \text{O} \\ 3 \quad 3 \\ + 6 \quad 6 \\ \hline \end{array}$$

99

$$\begin{array}{r} \text{T} \quad \text{O} \\ 7 \quad 2 \\ + 1 \quad 2 \\ \hline \end{array}$$

84

$$\begin{array}{r} \text{T} \quad \text{O} \\ 6 \quad 5 \\ + 2 \quad 2 \\ \hline \end{array}$$

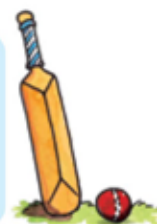
87

2. Write the sum in the box and find the answer.

- a. In a cricket match, Shahid made 53 runs. Moiz made 41 runs. How many runs did they make altogether?

$$\begin{array}{r} 53 \\ + 41 \\ \hline \end{array}$$

94



- b. Ayesha counts 24 beads in one necklace and 62 beads in another. How many beads are there altogether?

$$\begin{array}{r} 62 \\ + 24 \\ \hline \end{array}$$

86



- c. In Afshan's house, there are 15 dogs and 12 cats. How many animals are there altogether?

$$\begin{array}{r} 15 \\ + 12 \\ \hline \end{array}$$

27



Addition: converting ones

Look at this sum.

$$\begin{array}{r} \text{T} \quad \text{O} \\ 8 \quad \bullet \bullet \bullet \bullet \\ + \quad 2 \quad \bullet \bullet \\ \hline \end{array}$$

It is an easy sum.

We know the answer is 10.

But we cannot put 10 in the ones column.

The greatest number we can put in the ones column is 9.

So we must change 10 ones to 1 ten and 0 ones.

We write the answer like this:

$$\begin{array}{r} \text{T} \quad \text{O} \\ 8 \quad \bullet \bullet \bullet \bullet \\ + \quad 2 \quad \bullet \bullet \\ \hline 1 \quad 0 \end{array}$$

1. Do the given sums. Be careful with your columns!

a.

$$\begin{array}{r} \text{T} \quad \text{O} \\ 7 \\ + \quad 3 \\ \hline \end{array}$$

10

b.

$$\begin{array}{r} \text{T} \quad \text{O} \\ 5 \\ + \quad 5 \\ \hline \end{array}$$

10

c.

$$\begin{array}{r} \text{T} \quad \text{O} \\ 4 \\ + \quad 6 \\ \hline \end{array}$$

10

d.

$$\begin{array}{r} \text{T} \quad \text{O} \\ 9 \\ + \quad 1 \\ \hline \end{array}$$

10

e.

$$\begin{array}{r} \text{T} \quad \text{O} \\ 6 \\ + \quad 4 \\ \hline \end{array}$$

10

f.

$$\begin{array}{r} \text{T} \quad \text{O} \\ 3 \\ + \quad 7 \\ \hline \end{array}$$

10

g.

$$\begin{array}{r} \text{T} \quad \text{O} \\ 2 \\ + \quad 8 \\ \hline \end{array}$$

10

h.

$$\begin{array}{r} \text{T} \quad \text{O} \\ 6 \\ + \quad 4 \\ \hline \end{array}$$

10

Addition: converting ones

Look at this sum.

$$\begin{array}{r} \text{T} \quad \text{O} \\ 9 \\ + \quad 3 \\ \hline 12 \end{array}$$

This is not correct.

We know $9 + 3$ is 12.

But we cannot write 12 in the ones column.

We must change 12 to 1 ten and 2 ones. So, we write our answer like this:

$$\begin{array}{r} \text{T} \quad \text{O} \\ 9 \\ + \quad 3 \\ \hline 1 \quad 2 \end{array}$$

This is correct.

2. Complete the following.

$$\begin{array}{r} \text{a.} \quad \text{T} \quad \text{O} \\ 8 \\ + \quad 4 \\ \hline \end{array}$$

12

$$\begin{array}{r} \text{b.} \quad \text{T} \quad \text{O} \\ 7 \\ + \quad 8 \\ \hline \end{array}$$

15

$$\begin{array}{r} \text{c.} \quad \text{T} \quad \text{O} \\ 6 \\ + \quad 7 \\ \hline \end{array}$$

13

$$\begin{array}{r} \text{d.} \quad \text{T} \quad \text{O} \\ 5 \\ + \quad 9 \\ \hline \end{array}$$

14

$$\begin{array}{r} \text{e.} \quad \text{T} \quad \text{O} \\ 5 \\ + \quad 7 \\ \hline \end{array}$$

12

$$\begin{array}{r} \text{f.} \quad \text{T} \quad \text{O} \\ 9 \\ + \quad 2 \\ \hline \end{array}$$

11

$$\begin{array}{r} \text{g.} \quad \text{T} \quad \text{O} \\ 7 \\ + \quad 9 \\ \hline \end{array}$$

16

$$\begin{array}{r} \text{h.} \quad \text{T} \quad \text{O} \\ 4 \\ + \quad 7 \\ \hline \end{array}$$

11

Tens and ones

3. Help Adil put his blocks into tens and ones.



REMEMBER

If Adil has more than 9 ones, he must change.

a.



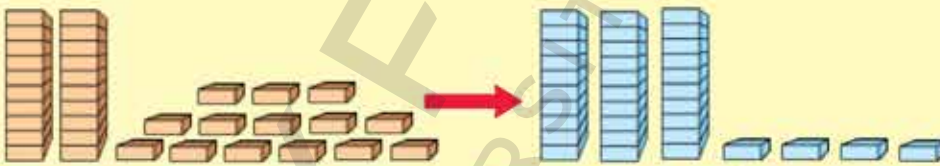
1 ten 11 ones = 2 tens 1 one = 21

b.



1 ten 16 ones = 2 tens 6 ones = 26

c.



2 tens 14 ones = 3 tens 4 ones = 34

d.



4 tens 12 ones = 5 tens 2 ones = 52

4. Which is the biggest group?


52 (d)

5. Which is the smallest group?

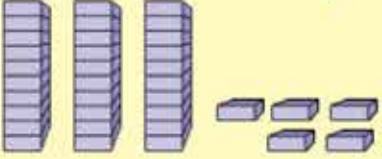
21 (a)

Addition: converting ones

Adil now adds more blocks.




He begins with



3 tens 5 ones



And adds 8 ones



3 tens 5 ones + 8 ones

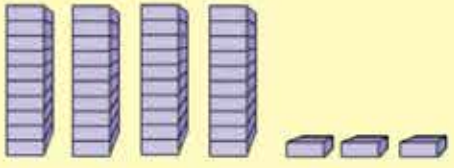
3 tens 13 ones

Adil writes the addition sum like this.



T	O
3	5
+	8
4	3

Adil knows he must change his ones so he puts 10 ones in the tens column.



4 tens 3 ones

REMEMBER

Remember to move the additional 'ten' to the 'tens' column.

Addition: converting ones

6. Add the following using columns.

$$\begin{array}{r} \text{a.} \quad \text{T O} \\ | \\ 26 \\ + 6 \\ \hline 32 \end{array}$$

$$\begin{array}{r} \text{b.} \quad \text{T O} \\ 38 \\ + 4 \\ \hline 42 \end{array}$$

$$\begin{array}{r} \text{c.} \quad \text{T O} \\ 55 \\ + 8 \\ \hline 63 \end{array}$$

$$\begin{array}{r} \text{d.} \quad \text{T O} \\ 64 \\ + 7 \\ \hline 71 \end{array}$$

$$\begin{array}{r} \text{e.} \quad \text{T O} \\ 36 \\ + 7 \\ \hline 43 \end{array}$$

$$\begin{array}{r} \text{f.} \quad \text{T O} \\ 87 \\ + 8 \\ \hline 95 \end{array}$$

$$\begin{array}{r} \text{g.} \quad \text{T O} \\ 46 \\ + 9 \\ \hline 55 \end{array}$$

$$\begin{array}{r} \text{h.} \quad \text{T O} \\ 71 \\ + 8 \\ \hline 79 \end{array}$$

7. Add the following.

$$\begin{array}{r} \text{a.} \quad \text{T O} \\ | \\ 47 \\ + 16 \\ \hline 63 \end{array}$$

$$\begin{array}{r} \text{b.} \quad \text{T O} \\ 64 \\ + 28 \\ \hline 92 \end{array}$$

$$\begin{array}{r} \text{c.} \quad \text{T O} \\ 17 \\ + 58 \\ \hline 75 \end{array}$$

$$\begin{array}{r} \text{d.} \quad \text{T O} \\ 24 \\ + 39 \\ \hline 63 \end{array}$$

$$\begin{array}{r} \text{e.} \quad \text{T O} \\ 45 \\ + 46 \\ \hline 91 \end{array}$$

$$\begin{array}{r} \text{f.} \quad \text{T O} \\ 22 \\ + 39 \\ \hline 61 \end{array}$$

$$\begin{array}{r} \text{g.} \quad \text{T O} \\ 39 \\ + 19 \\ \hline 58 \end{array}$$

$$\begin{array}{r} \text{h.} \quad \text{T O} \\ 29 \\ + 15 \\ \hline 44 \end{array}$$

$$\begin{array}{r} \text{i.} \quad \text{T O} \\ 37 \\ + 47 \\ \hline 84 \end{array}$$

$$\begin{array}{r} \text{j.} \quad \text{T O} \\ 18 \\ + 72 \\ \hline 90 \end{array}$$

$$\begin{array}{r} \text{k.} \quad \text{T O} \\ 24 \\ + 15 \\ \hline 39 \end{array}$$

$$\begin{array}{r} \text{l.} \quad \text{T O} \\ 69 \\ + 11 \\ \hline 80 \end{array}$$

Addition: converting ones

8. Add.

$$\begin{array}{r} \text{a.} \quad \text{T O} \\ | \\ 28 \\ + 58 \\ \hline 86 \end{array}$$

$$\begin{array}{r} \text{b.} \quad \text{T O} \\ 65 \\ + 14 \\ \hline 79 \end{array}$$

$$\begin{array}{r} \text{c.} \quad \text{T O} \\ 74 \\ + 17 \\ \hline 91 \end{array}$$

$$\begin{array}{r} \text{d.} \quad \text{T O} \\ 34 \\ + 48 \\ \hline 82 \end{array}$$

$$\begin{array}{r} \text{e.} \quad \text{T O} \\ 56 \\ + 39 \\ \hline 95 \end{array}$$

$$\begin{array}{r} \text{f.} \quad \text{T O} \\ 48 \\ + 22 \\ \hline 70 \end{array}$$

$$\begin{array}{r} \text{g.} \quad \text{T O} \\ 66 \\ + 19 \\ \hline 85 \end{array}$$

$$\begin{array}{r} \text{h.} \quad \text{T O} \\ 52 \\ + 37 \\ \hline 89 \end{array}$$

9. Write the sums in the box to find the answer.

- a. Maha plants 25 trees.
Ayesha plants 18 more.
How many trees do they
plant altogether?

$$\begin{array}{r} \text{T O} \\ | \\ 25 \\ + 18 \\ \hline \end{array}$$



- b. A monkey eats 29 bananas
and then 12 more.
How many bananas does he
eat altogether?

$$\begin{array}{r} 29 \\ + 12 \\ \hline \end{array}$$

41



- c. Ali saves 25 buckets of water
in a month. Rohail saves 17.
Together, how much water
do they save in a month?

$$\begin{array}{r} 25 \\ + 17 \\ \hline \end{array}$$

42



Addition: What should be added?



22 25 30 31 70 75 12 13 80 82 15 10

1. Pick one of the above given numbers to get the answer.
One has been done for you.

a. $22 + 25 = 47$

b. $70 + 75 = 145$

c. $10 + 80 = 90$

d. $80 + 30 = 110$

e. $24 + 31 = 55$

f. $10 + 12 = 22$

g. $30 + 70 = 100$

h. $12 + 70 = 82$

i. $12 + 13 = 25$

j. $19 + 82 = 101$

k. $30 + 31 = 61$

l. $75 + 10 = 85$

m. $5 + 80 = 85$

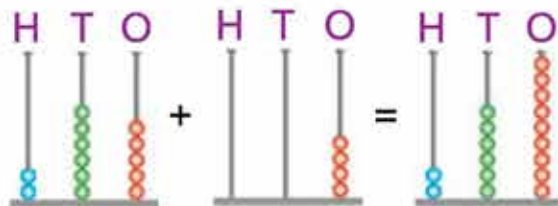
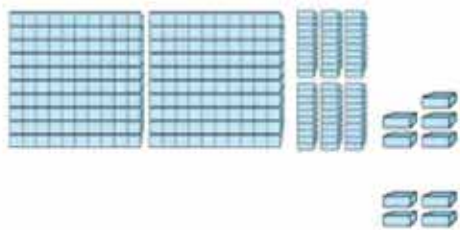
n. $25 + 70 = 95$

o. $12 + 15 = 27$

p. $5 + 22 = 27$

Addition of 3-digit numbers: no conversion

Let us add 265 and 4.



2 hundreds, 6 tens, 9 ones

REMEMBER

Write ones under the ones.

$$\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ 2 \quad 6 \quad 5 \\ + \quad \quad 4 \\ \hline 2 \quad 6 \quad 9 \end{array}$$

1. Now add these.

$$\begin{array}{r} \text{a.} \quad \text{H} \quad \text{T} \quad \text{O} \\ 2 \quad 1 \quad 6 \\ + \quad \quad 3 \\ \hline 2 \quad 1 \quad 9 \end{array}$$

$$\begin{array}{r} \text{b.} \quad \text{H} \quad \text{T} \quad \text{O} \\ 5 \quad 2 \quad 3 \\ + \quad \quad 6 \\ \hline 5 \quad 2 \quad 9 \end{array}$$

$$\begin{array}{r} \text{c.} \quad \text{H} \quad \text{T} \quad \text{O} \\ 3 \quad 4 \quad 1 \\ + \quad \quad 8 \\ \hline 3 \quad 4 \quad 9 \end{array}$$

$$\begin{array}{r} \text{d.} \quad \text{H} \quad \text{T} \quad \text{O} \\ 3 \quad 0 \quad 5 \\ + \quad \quad 3 \\ \hline 3 \quad 0 \quad 8 \end{array}$$

$$\begin{array}{r} \text{e.} \quad \text{H} \quad \text{T} \quad \text{O} \\ 1 \quad 0 \quad 1 \\ + \quad \quad 7 \\ \hline 1 \quad 0 \quad 8 \end{array}$$

$$\begin{array}{r} \text{f.} \quad \text{H} \quad \text{T} \quad \text{O} \\ 9 \quad 0 \quad 4 \\ + \quad \quad 5 \\ \hline 9 \quad 0 \quad 9 \end{array}$$

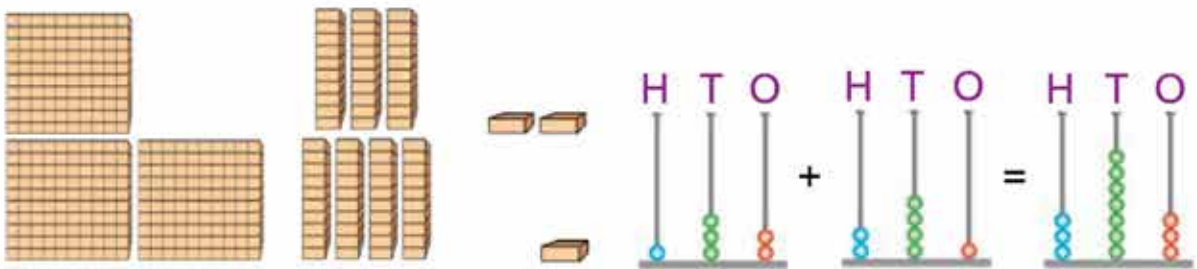
$$\begin{array}{r} \text{g.} \quad \text{H} \quad \text{T} \quad \text{O} \\ 4 \quad 2 \quad 5 \\ + \quad \quad 3 \\ \hline 4 \quad 2 \quad 8 \end{array}$$

$$\begin{array}{r} \text{h.} \quad \text{H} \quad \text{T} \quad \text{O} \\ 7 \quad 2 \quad 4 \\ + \quad \quad 2 \\ \hline 7 \quad 2 \quad 6 \end{array}$$

$$\begin{array}{r} \text{i.} \quad \text{H} \quad \text{T} \quad \text{O} \\ 6 \quad 1 \quad 7 \\ + \quad \quad 1 \\ \hline 6 \quad 1 \quad 8 \end{array}$$

Addition of 3-digit numbers: no conversion

Let us add together 132 and 241.



3 hundreds, 7 tens, 3 ones

REMEMBER

Add ones first, tens next, hundreds last.

H	T	O	
1	3	2	
+	2	4	1
3	7	3	

2. Now add these.

a.	H	T	O
	4	4	1
+	3	2	6
	7	6	7

b.	H	T	O
	5	6	2
+	2	3	4
	7	9	6

c.	H	T	O
	6	3	6
+		6	3
	6	9	9

d.	H	T	O
	1	0	1
+	6	1	8
	7	1	9

e.	H	T	O
	7	2	3
+	1	6	5
	8	8	8

f.	H	T	O
	2	7	1
+		2	7
	2	9	8

g.	H	T	O
	4	8	3
+	2	0	6
	6	8	9

h.	H	T	O
	9	0	4
+		9	2
	9	9	6

i.	H	T	O
	6	3	8
+	3	2	1
	9	5	9

Addition: real-life story sums

1. Add the following converting where necessary.

- a. Saima has 151 stamps. She collects 108 more. How many stamps does she have altogether?

$$\begin{array}{r} 151 \\ + 108 \\ \hline 259 \end{array}$$



- b. Mazhar is reading a storybook. On Saturday, he read 244 pages and on Sunday 125 pages. How many pages did he read over the weekend?

$$\begin{array}{r} 244 \\ + 125 \\ \hline 369 \end{array}$$



- c. Saira has 156 toffees. Sameeha has 118. How many toffees do they have altogether?

$$\begin{array}{r} 156 \\ + 118 \\ \hline 274 \end{array}$$



- d. 636 girls and 241 boys visited a library in a month. How many children were there altogether?

$$\begin{array}{r} 636 \\ + 241 \\ \hline 877 \end{array}$$



- e. In an orchard, Rehan plants 152 mango saplings and Rida plants 37 guava saplings. How many saplings do they plant altogether?

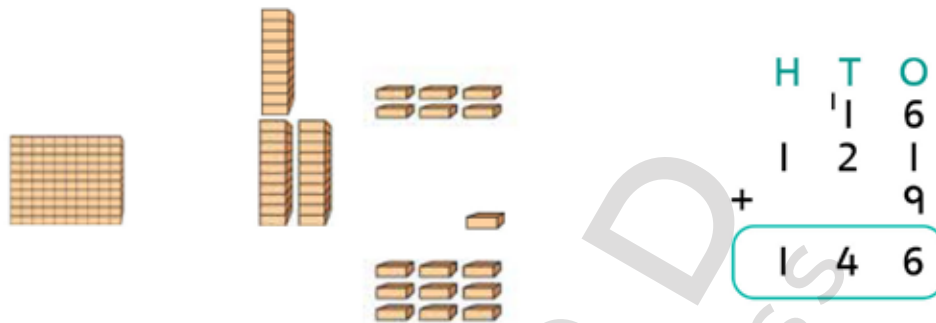
$$\begin{array}{r} 152 \\ + 37 \\ \hline 189 \end{array}$$



Addition: more about converting ones

After learning conversion, many numbers can be added together.

First, we add the ones. Then, we add the tens.
Then, we add the hundreds.



Now, look at this sum.



We have too many ones! We have 24 ones.
Change 24 into 2 tens and 4 ones.



REMEMBER

We must put 2 tens into the tens column.

Addition of several numbers: converting ones

3. Complete these sums.

$$\begin{array}{r} \text{a.} \quad \text{H T O} \\ \quad \quad 1 \ 4 \\ \quad \quad 3 \ 0 \ 9 \\ + \quad 1 \ 0 \ 8 \\ \hline \end{array}$$

431

$$\begin{array}{r} \text{b.} \quad \text{H T O} \\ \quad \quad 4 \ 2 \ 7 \\ \quad \quad \quad 4 \ 9 \\ + \quad 2 \ 0 \ 9 \\ \hline \end{array}$$

685

$$\begin{array}{r} \text{c.} \quad \text{H T O} \\ \quad \quad 3 \ 3 \ 6 \\ \quad \quad \quad 2 \ 6 \\ + \quad 1 \ 1 \ 8 \\ \hline \end{array}$$

480

$$\begin{array}{r} \text{d.} \quad \text{H T O} \\ \quad \quad 9 \ 0 \ 9 \\ \quad \quad \quad 4 \ 8 \\ + \quad \quad 2 \ 5 \\ \hline \end{array}$$

982

$$\begin{array}{r} \text{e.} \quad \text{H T O} \\ \quad \quad 5 \ 2 \ 6 \\ \quad \quad \quad 1 \ 9 \\ \quad \quad \quad \quad 1 \ 0 \\ + \quad \quad \quad \quad 4 \\ \hline \end{array}$$

559

$$\begin{array}{r} \text{f.} \quad \text{H T O} \\ \quad \quad 1 \ 3 \ 8 \\ \quad \quad \quad 1 \ 0 \ 8 \\ \quad \quad \quad \quad 2 \ 8 \\ + \quad \quad \quad \quad 5 \\ \hline \end{array}$$

279

$$\begin{array}{r} \text{g.} \quad \text{H T O} \\ \quad \quad 4 \ 5 \\ \quad \quad \quad 1 \ 0 \ 9 \\ \quad \quad \quad \quad 1 \ 8 \\ + \quad 1 \ 2 \ 3 \\ \hline \end{array}$$

295

$$\begin{array}{r} \text{h.} \quad \text{H T O} \\ \quad \quad 2 \ 4 \ 6 \\ \quad \quad \quad 1 \ 1 \ 1 \\ \quad \quad \quad \quad 1 \ 7 \\ + \quad \quad \quad \quad 9 \\ \hline \end{array}$$

383

$$\begin{array}{r} \text{i.} \quad \text{H T O} \\ \quad \quad 1 \ 6 \\ \quad \quad 4 \ 1 \ 8 \\ \quad \quad \quad \quad 7 \\ + \quad 1 \ 2 \ 0 \\ \hline \end{array}$$

561

$$\begin{array}{r} \text{j.} \quad \text{H T O} \\ \quad \quad \quad 6 \\ \quad \quad 4 \ 2 \ 3 \\ \quad \quad \quad 1 \ 9 \\ + \quad 2 \ 0 \ 5 \\ \hline \end{array}$$

653

$$\begin{array}{r} \text{k.} \quad \text{H T O} \\ \quad \quad 1 \ 2 \ 8 \\ \quad \quad \quad 2 \ 6 \\ \quad \quad \quad 5 \ 0 \ 7 \\ + \quad 1 \ 1 \ 7 \\ \hline \end{array}$$

778

$$\begin{array}{r} \text{l.} \quad \text{H T O} \\ \quad \quad \quad 3 \ 7 \\ \quad \quad \quad \quad 8 \\ \quad \quad 3 \ 0 \ 5 \\ + \quad \quad 4 \ 0 \\ \hline \end{array}$$

390

$$\begin{array}{r} \text{m.} \quad \text{H T O} \\ \quad \quad 1 \ 2 \ 5 \\ \quad \quad 1 \ 0 \ 6 \\ \quad \quad 1 \ 0 \ 7 \\ + \quad \quad 3 \ 8 \\ \hline \end{array}$$

376

$$\begin{array}{r} \text{n.} \quad \text{H T O} \\ \quad \quad \quad 3 \ 6 \\ \quad \quad 2 \ 0 \ 4 \\ \quad \quad 1 \ 1 \ 9 \\ + \quad \quad \quad 3 \\ \hline \end{array}$$

362

$$\begin{array}{r} \text{o.} \quad \text{H T O} \\ \quad \quad 5 \ 0 \ 8 \\ \quad \quad 1 \ 2 \ 7 \\ \quad \quad \quad 5 \ 2 \\ + \quad 2 \ 0 \ 8 \\ \hline \end{array}$$

895

$$\begin{array}{r} \text{p.} \quad \text{H T O} \\ \quad \quad 4 \ 4 \ 6 \\ \quad \quad 2 \ 0 \ 8 \\ \quad \quad 3 \ 1 \ 6 \\ + \quad \quad 2 \ 4 \\ \hline \end{array}$$

994

Higher order thinking skills

Addition: converting tens and hundreds

See what happens when Adil adds 1 more to 999 blocks:

We know how to change ones.
We can change tens and hundreds too!



Here is
Adil's sum

	H	T	O
	9	9	9
+			1

When he adds
1 more one, he
makes 10 ones.
He changes 10
ones into 1 ten.

	H	T	O
	9	9	9
+			1

Now, Adil has 10 hundreds.
He knows he must change
these into 1 thousand.

	H	T	O
	9	9	9
+			1

Now, he has
10 tens.
He changes
10 tens into
1 hundred.

	H	T	O
	9	9	9
+			1

REMEMBER

$$9 + 1 = 10$$

$$99 + 1 = 100$$

$$999 + 1 = 1000$$

Think and solve

1. Each child's score is the total of the numbers on the two sheets they hold.



- a. Which child has the lowest score? Aamir
- b. Which child has the highest score? Majeed
- c. Whose score is nearest to Majeed's? Aliya
- d. How many more marks does Aamir require to make his score 50? 3
- e. What is Aliya's score? 70
- f. What is the total score obtained by Aamir, Aliya, and Majeed? 190

2. I have 37 marbles and Seema has 26 marbles.

- a. How many more marbles have I than Seema?
11
- b. How many do we have altogether? 63
- c. How many more do we need to make 100? 37

3. Twelve goldfish were taken from a fish tank to be sold at the shop.

This left 14 fish in the tank.

How many fish were there to start with? 26

Addition: converting tens and ones

1. Complete these, converting where necessary.

a. H T O

$$\begin{array}{r} \\ 66 \\ + 94 \\ \hline \end{array}$$

160

b. H T O

$$\begin{array}{r} 49 \\ + 73 \\ \hline \end{array}$$

122

c. H T O

$$\begin{array}{r} 55 \\ + 47 \\ \hline \end{array}$$

102

d. H T O

$$\begin{array}{r} 87 \\ + 59 \\ \hline \end{array}$$

146

e. H T O

$$\begin{array}{r} 95 \\ + 59 \\ \hline \end{array}$$

154

f. H T O

$$\begin{array}{r} 38 \\ + 82 \\ \hline \end{array}$$

120

g. H T O

$$\begin{array}{r} 79 \\ + 64 \\ \hline \end{array}$$

143

h. H T O

$$\begin{array}{r} 47 \\ + 88 \\ \hline \end{array}$$

135

i. H T O

$$\begin{array}{r} \\ 45 \\ + 165 \\ \hline \end{array}$$

210

j. H T O

$$\begin{array}{r} 296 \\ + 47 \\ \hline \end{array}$$

343

k. H T O

$$\begin{array}{r} 54 \\ + 359 \\ \hline \end{array}$$

413

l. H T O

$$\begin{array}{r} 76 \\ + 285 \\ \hline \end{array}$$

361

m. H T O

$$\begin{array}{r} 403 \\ + 291 \\ \hline \end{array}$$

694

n. H T O

$$\begin{array}{r} 384 \\ + 137 \\ \hline \end{array}$$

521

o. H T O

$$\begin{array}{r} 255 \\ + 209 \\ \hline \end{array}$$

464

p. H T O

$$\begin{array}{r} 563 \\ + 187 \\ \hline \end{array}$$

750

q. H T O

$$\begin{array}{r} 909 \\ + 81 \\ \hline \end{array}$$

990

r. H T O

$$\begin{array}{r} 748 \\ + 168 \\ \hline \end{array}$$

916

s. H T O

$$\begin{array}{r} 577 \\ + 309 \\ \hline \end{array}$$

886

t. H T O

$$\begin{array}{r} 795 \\ + 149 \\ \hline \end{array}$$

944



3

Subtraction

Subtraction

1. Do you remember how to subtract big numbers? Start with the ones, then subtract the tens.

$$\begin{array}{r} \text{T O} \\ 38 \\ - 16 \\ \hline 22 \end{array}$$

$$\begin{array}{r} \text{T O} \\ 69 \\ - 23 \\ \hline 46 \end{array}$$

$$\begin{array}{r} \text{T O} \\ 54 \\ - 41 \\ \hline 13 \end{array}$$

$$\begin{array}{r} \text{T O} \\ 77 \\ - 25 \\ \hline 52 \end{array}$$

$$\begin{array}{r} \text{T O} \\ 45 \\ - 33 \\ \hline 12 \end{array}$$

$$\begin{array}{r} \text{T O} \\ 98 \\ - 76 \\ \hline 22 \end{array}$$

$$\begin{array}{r} \text{T O} \\ 67 \\ - 30 \\ \hline 37 \end{array}$$

$$\begin{array}{r} \text{T O} \\ 48 \\ - 46 \\ \hline 2 \end{array}$$

2. Use subtraction to answer these.

- a. There are 28 flowers in a basket. 16 are used for a garland. How many are left?

$$\begin{array}{r} 28 \\ - 16 \\ \hline 12 \end{array}$$



- b. Laila has 59 rabbits. 18 hop away. How many rabbits are left?

$$\begin{array}{r} 59 \\ - 18 \\ \hline 41 \end{array}$$



Subtraction: converting

Look at this sum.

There are 52 balloons at a party. 7 burst.
How many balloons are left?

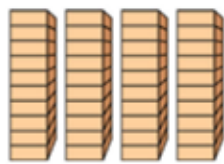


$$\begin{array}{r} \text{T} \quad \text{O} \\ 5 \quad 2 \\ - \quad 7 \\ \hline \end{array}$$



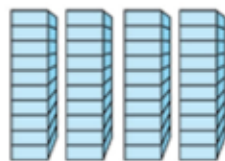
How can we take away 7 ones from 2 ones?
We need more ones.

Take 1 ten from the tens column and change
it into 10 ones.



$$\begin{array}{r} \text{T} \quad \text{O} \\ 4 \quad 10 \\ \cancel{5} \quad 2 \\ - \quad 7 \\ \hline \end{array}$$

We can have $10 + 2 = 12$ ones.
Now, we can complete the sum.



$$\begin{array}{r} \text{T} \quad \text{O} \\ 4 \quad 12 \\ \cancel{5} \quad 2 \\ - \quad 7 \\ \hline 4 \quad 5 \end{array}$$

Subtraction: converting

3. Help Tiger do the sums.

I need more ones...

$$\begin{array}{r} \text{T O} \\ 43 \\ - 26 \\ \hline \end{array}$$

I change 1 ten into 10 ones.

$$\begin{array}{r} \text{T O} \\ 310 \\ - 26 \\ \hline \end{array}$$

Now I can subtract!

$$\begin{array}{r} \text{T O} \\ 310 \\ - 26 \\ \hline 17 \end{array}$$

a. $\begin{array}{r} \text{T O} \\ 5615 \\ - 47 \\ \hline 18 \end{array}$

b. $\begin{array}{r} \text{T O} \\ 6712 \\ - 25 \\ \hline 47 \end{array}$

c. $\begin{array}{r} \text{T O} \\ 4511 \\ - 28 \\ \hline 23 \end{array}$

d. $\begin{array}{r} \text{T O} \\ 2313 \\ - 19 \\ \hline 14 \end{array}$

e. $\begin{array}{r} \text{T O} \\ 8910 \\ - 26 \\ \hline 64 \end{array}$

f. $\begin{array}{r} \text{T O} \\ 3414 \\ - 27 \\ \hline 17 \end{array}$

g. $\begin{array}{r} \text{T O} \\ 7813 \\ - 48 \\ \hline 35 \end{array}$

h. $\begin{array}{r} \text{T O} \\ 4514 \\ - 36 \\ \hline 18 \end{array}$

i. $\begin{array}{r} \text{T O} \\ 9918 \\ - 89 \\ \hline 9 \end{array}$

j. $\begin{array}{r} \text{T O} \\ 6713 \\ - 47 \\ \hline 26 \end{array}$

k. $\begin{array}{r} \text{T O} \\ 1215 \\ - 18 \\ \hline 7 \end{array}$

l. $\begin{array}{r} \text{T O} \\ 6715 \\ - 47 \\ \hline 28 \end{array}$

Subtraction: converting

4. Complete these sums, converting where necessary.

a. T O

$$\begin{array}{r} 34\ 18 \\ - 1\ 9 \\ \hline \end{array}$$

29

b. T O

$$\begin{array}{r} 78\ 13 \\ - 2\ 7 \\ \hline \end{array}$$

56

c. T O

$$\begin{array}{r} 34\ 11 \\ - 2\ 2 \\ \hline \end{array}$$

19

d. T O

$$\begin{array}{r} 5\ 7 \\ - 3\ 6 \\ \hline \end{array}$$

21

e. T O

$$\begin{array}{r} 67\ 16 \\ - 2\ 7 \\ \hline \end{array}$$

49

f. T O

$$\begin{array}{r} 78\ 10 \\ - 4\ 7 \\ \hline \end{array}$$

33

g. T O

$$\begin{array}{r} 74\ 13 \\ - 1\ 9 \\ \hline \end{array}$$

24

h. T O

$$\begin{array}{r} 23\ 14 \\ - 2\ 8 \\ \hline \end{array}$$

6

5. Use subtraction to answer these.

- a. Gibran had 32 toys. He gave 17 to an orphanage. How many are left?

$$\begin{array}{r} 32 \\ - 17 \\ \hline \end{array}$$

15



- b. There are 64 cans of cola. The children drink 48 cans. How many are left?

$$\begin{array}{r} 64 \\ - 48 \\ \hline \end{array}$$

16



- c. 85 people come to a circus. If 49 leave before the end how many stay till the end?

$$\begin{array}{r} 85 \\ - 49 \\ \hline \end{array}$$

36



- d. There are 26 fish in a tank. A cat eats 18 of them. How many are left?

$$\begin{array}{r} 26 \\ - 18 \\ \hline \end{array}$$

8



Subtraction of 3-digit numbers: no conversion

1. Help Tiger do her sums.

These sums are easy. But remember: subtract **ones** first, **tens** next, and **hundreds** last.



$$\begin{array}{r} \text{a.} \quad \text{H T O} \\ 969 \\ - 45 \\ \hline 924 \end{array}$$

$$\begin{array}{r} \text{b.} \quad \text{H T O} \\ 776 \\ - 34 \\ \hline 742 \end{array}$$

$$\begin{array}{r} \text{c.} \quad \text{H T O} \\ 584 \\ - 71 \\ \hline 513 \end{array}$$

$$\begin{array}{r} \text{d.} \quad \text{H T O} \\ 395 \\ - 74 \\ \hline 321 \end{array}$$

$$\begin{array}{r} \text{e.} \quad \text{H T O} \\ 668 \\ - 56 \\ \hline 612 \end{array}$$

$$\begin{array}{r} \text{f.} \quad \text{H T O} \\ 438 \\ - 127 \\ \hline 311 \end{array}$$

$$\begin{array}{r} \text{g.} \quad \text{H T O} \\ 299 \\ - 214 \\ \hline 85 \end{array}$$

$$\begin{array}{r} \text{h.} \quad \text{H T O} \\ 878 \\ - 413 \\ \hline 465 \end{array}$$

$$\begin{array}{r} \text{i.} \quad \text{H T O} \\ 590 \\ - 460 \\ \hline 130 \end{array}$$

$$\begin{array}{r} \text{j.} \quad \text{H T O} \\ 596 \\ - 210 \\ \hline 386 \end{array}$$

$$\begin{array}{r} \text{k.} \quad \text{H T O} \\ 787 \\ - 747 \\ \hline 40 \end{array}$$

$$\begin{array}{r} \text{l.} \quad \text{H T O} \\ 648 \\ - 425 \\ \hline 223 \end{array}$$

$$\begin{array}{r} \text{m.} \quad \text{H T O} \\ 395 \\ - 105 \\ \hline 290 \end{array}$$

$$\begin{array}{r} \text{n.} \quad \text{H T O} \\ 606 \\ - 102 \\ \hline 504 \end{array}$$

$$\begin{array}{r} \text{o.} \quad \text{H T O} \\ 567 \\ - 351 \\ \hline 216 \end{array}$$

$$\begin{array}{r} \text{p.} \quad \text{H T O} \\ 924 \\ - 803 \\ \hline 121 \end{array}$$

Subtraction: converting tens

2. Now help Tiger change ones to complete these sums.

I need more ones...

$$\begin{array}{r} \text{H T O} \\ 244 \\ - 127 \\ \hline \end{array}$$

I change 1 ten into 10 ones.

$$\begin{array}{r} \text{H T O} \\ 2\overset{3}{4}\overset{1}{4} \\ - 127 \\ \hline \end{array}$$

Now I can subtract!

$$\begin{array}{r} \text{H T O} \\ 2\overset{3}{4}\overset{1}{4} \\ - 127 \\ \hline 117 \end{array}$$

a. H T O

$$\begin{array}{r} 3\overset{5}{6}\overset{1}{3} \\ - 28 \\ \hline \end{array}$$

3 3 5

b. H T O

$$\begin{array}{r} 2\overset{7}{8}12 \\ - 54 \\ \hline \end{array}$$

2 2 8

c. H T O

$$\begin{array}{r} 2\overset{8}{9}16 \\ - 37 \\ \hline \end{array}$$

2 5 9

d. H T O

$$\begin{array}{r} 1\overset{7}{8}11 \\ - 49 \\ \hline \end{array}$$

1 3 2

e. 7⁶7¹4

$$\begin{array}{r} 7\overset{6}{7}\overset{1}{4} \\ - 148 \\ \hline \end{array}$$

6 2 6

f. 6⁴5¹0

$$\begin{array}{r} 6\overset{4}{5}\overset{1}{0} \\ - 223 \\ \hline \end{array}$$

4 2 7

g. 8⁵6¹4

$$\begin{array}{r} 8\overset{5}{6}\overset{1}{4} \\ - 106 \\ \hline \end{array}$$

7 5 8

h. 3²3¹5

$$\begin{array}{r} 3\overset{2}{3}\overset{1}{5} \\ - 117 \\ \hline \end{array}$$

2 1 8

i. 5⁵6¹2

$$\begin{array}{r} 5\overset{5}{6}\overset{1}{2} \\ - 348 \\ \hline \end{array}$$

2 1 4

j. 2⁸9¹1

$$\begin{array}{r} 2\overset{8}{9}\overset{1}{1} \\ - 268 \\ \hline \end{array}$$

2 3

k. 7²3¹0

$$\begin{array}{r} 7\overset{2}{3}\overset{1}{0} \\ - 615 \\ \hline \end{array}$$

1 1 5

l. 8⁴4¹3

$$\begin{array}{r} 8\overset{4}{4}\overset{1}{3} \\ - 136 \\ \hline \end{array}$$

7 0 7

m. 6⁸9¹2

$$\begin{array}{r} 6\overset{8}{9}\overset{1}{2} \\ - 286 \\ \hline \end{array}$$

4 0 6

n. 1⁸9¹1

$$\begin{array}{r} 1\overset{8}{9}\overset{1}{1} \\ - 187 \\ \hline \end{array}$$

4

o. 5⁵6¹7

$$\begin{array}{r} 5\overset{5}{6}\overset{1}{7} \\ - 318 \\ \hline \end{array}$$

2 4 9

p. 2²3¹4

$$\begin{array}{r} 2\overset{2}{3}\overset{1}{4} \\ - 117 \\ \hline \end{array}$$

1 1 7

Subtraction: converting tens

I need more tens...

$$\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ 6 \quad 2 \quad 7 \\ - 2 \quad 4 \quad 1 \\ \hline \quad 6 \end{array}$$

I change 1 hundred into 10 tens.

$$\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{5}{\cancel{6}} \quad \overset{1}{2} \quad 7 \\ - 2 \quad 4 \quad 1 \\ \hline \quad 6 \end{array}$$

Now I can subtract!

$$\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{5}{\cancel{6}} \quad \overset{1}{2} \quad 7 \\ - 2 \quad 4 \quad 1 \\ \hline 3 \quad 8 \quad 6 \end{array}$$

1. Help Tiger do these sums.

<p>a. $\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{4}{\cancel{5}} \quad \overset{1}{3} \quad 8 \\ - \quad 5 \quad 3 \\ \hline 4 \quad 8 \quad 5 \end{array}$</p>	<p>b. $\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{3}{\cancel{4}} \quad \overset{1}{2} \quad 7 \\ - \quad 6 \quad 5 \\ \hline 3 \quad 6 \quad 2 \end{array}$</p>	<p>c. $\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{2}{\cancel{3}} \quad \overset{1}{4} \quad 5 \\ - \quad 5 \quad 4 \\ \hline 2 \quad 9 \quad 1 \end{array}$</p>	<p>d. $\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{0}{\cancel{1}} \quad \overset{1}{0} \quad 9 \\ - \quad 5 \quad 7 \\ \hline 5 \quad 2 \end{array}$</p>
<p>e. $\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{6}{\cancel{7}} \quad \overset{1}{2} \quad 7 \\ - 2 \quad 3 \quad 4 \\ \hline 4 \quad 9 \quad 3 \end{array}$</p>	<p>f. $\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{4}{\cancel{5}} \quad \overset{1}{4} \quad 6 \\ - 1 \quad 7 \quad 5 \\ \hline 3 \quad 7 \quad 1 \end{array}$</p>	<p>g. $\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{2}{\cancel{2}} \quad \overset{1}{3} \quad 9 \\ - 1 \quad 5 \quad 6 \\ \hline 8 \quad 3 \end{array}$</p>	<p>h. $\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{3}{\cancel{4}} \quad \overset{1}{8} \quad 3 \\ - 2 \quad 9 \quad 2 \\ \hline 1 \quad 9 \quad 1 \end{array}$</p>
<p>i. $\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{2}{\cancel{3}} \quad \overset{1}{5} \quad 6 \\ - 1 \quad 7 \quad 4 \\ \hline 1 \quad 8 \quad 2 \end{array}$</p>	<p>j. $\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{5}{\cancel{6}} \quad \overset{1}{2} \quad 9 \\ - 4 \quad 8 \quad 8 \\ \hline 1 \quad 4 \quad 1 \end{array}$</p>	<p>k. $\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{3}{\cancel{4}} \quad \overset{1}{1} \quad 7 \\ - 2 \quad 6 \quad 7 \\ \hline 1 \quad 5 \quad 0 \end{array}$</p>	<p>l. $\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{4}{\cancel{5}} \quad \overset{1}{0} \quad 2 \\ - 3 \quad 9 \quad 1 \\ \hline 1 \quad 1 \quad 1 \end{array}$</p>
<p>m. $\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{9}{\cancel{9}} \quad \overset{1}{5} \quad 8 \\ - 1 \quad 9 \quad 4 \\ \hline 7 \quad 6 \quad 4 \end{array}$</p>	<p>n. $\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{2}{\cancel{2}} \quad \overset{1}{4} \quad 3 \\ - 1 \quad 8 \quad 3 \\ \hline 6 \quad 0 \end{array}$</p>	<p>o. $\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{6}{\cancel{7}} \quad \overset{1}{0} \quad 3 \\ - 1 \quad 8 \quad 3 \\ \hline 5 \quad 2 \quad 0 \end{array}$</p>	<p>p. $\begin{array}{r} \text{H} \quad \text{T} \quad \text{O} \\ \overset{5}{\cancel{6}} \quad \overset{1}{5} \quad 9 \\ - \quad 8 \quad 2 \\ \hline 5 \quad 7 \quad 7 \end{array}$</p>

Subtraction: converting hundreds and tens

Look at this sum:



H	T	O
3	4	2
-	1	5

I need ones

AND

I need tens!

Start with the ones column.
First convert 1 ten into 10 ones,
then subtract the ones column.

H	T	O
3	³ 4	¹ 2
-	1	5
7		

Next,
convert 1 hundred into 10 tens
and subtract the tens column.

H	T	O
² 3	¹³ 4	¹ 2
-	1	5
8		

Lastly,
subtract the hundreds column.

H	T	O
² 3	¹³ 4	¹ 2
-	1	5
1		
8		
7		

Here's my
answer!



Subtraction: converting hundreds and tens

1. Look at the previous page.

Follow Tiger's steps to complete these.

a.
$$\begin{array}{r} \text{H T O} \\ 275 \\ - 87 \\ \hline \end{array}$$

1 8 8

b.
$$\begin{array}{r} \text{H T O} \\ 234 \\ - 64 \\ \hline \end{array}$$

2 7 8

c.
$$\begin{array}{r} \text{H T O} \\ 151 \\ - 75 \\ \hline \end{array}$$

7 6

d.
$$\begin{array}{r} \text{H T O} \\ 233 \\ - 96 \\ \hline \end{array}$$

1 3 7

e.
$$\begin{array}{r} \text{H T O} \\ 237 \\ - 48 \\ \hline \end{array}$$

2 8 9

f.
$$\begin{array}{r} \text{H T O} \\ 452 \\ - 196 \\ \hline \end{array}$$

3 2 9

g.
$$\begin{array}{r} \text{H T O} \\ 562 \\ - 263 \\ \hline \end{array}$$

3 7 6

h.
$$\begin{array}{r} \text{H T O} \\ 343 \\ - 274 \\ \hline \end{array}$$

1 6 9

i.
$$\begin{array}{r} \text{H T O} \\ 453 \\ - 252 \\ \hline \end{array}$$

2 7 8

j.
$$\begin{array}{r} \text{H T O} \\ 675 \\ - 358 \\ \hline \end{array}$$

3 8 7

k.
$$\begin{array}{r} \text{H T O} \\ 892 \\ - 678 \\ \hline \end{array}$$

2 8 4

l.
$$\begin{array}{r} \text{H T O} \\ 342 \\ - 259 \\ \hline \end{array}$$

1 6 2

m.
$$\begin{array}{r} \text{H T O} \\ 275 \\ - 167 \\ \hline \end{array}$$

4 8

n.
$$\begin{array}{r} \text{H T O} \\ 237 \\ - 195 \\ \hline \end{array}$$

1 7 5

o.
$$\begin{array}{r} \text{H T O} \\ 672 \\ - 539 \\ \hline \end{array}$$

1 8 7

p.
$$\begin{array}{r} \text{H T O} \\ 563 \\ - 278 \\ \hline \end{array}$$

3 5 6

q.
$$\begin{array}{r} \text{H T O} \\ 346 \\ - 394 \\ \hline \end{array}$$

6 7

r.
$$\begin{array}{r} \text{H T O} \\ 782 \\ - 489 \\ \hline \end{array}$$

3 2 3

s.
$$\begin{array}{r} \text{H T O} \\ 457 \\ - 268 \\ \hline \end{array}$$

2 4 9

t.
$$\begin{array}{r} \text{H T O} \\ 190 \\ - 98 \\ \hline \end{array}$$

9 2

Review: addition and subtraction

1. Complete the sums, converting where necessary.
Remember to look for + or -.

$$\begin{array}{r} \text{a.} \quad \text{T O} \\ 13 \\ + 28 \\ \hline \end{array}$$

41

$$\begin{array}{r} \text{b.} \quad \text{T O} \\ 32 \\ + 67 \\ \hline \end{array}$$

99

$$\begin{array}{r} \text{c.} \quad \text{T O} \\ 45 \quad 14 \\ - \quad \quad 7 \\ \hline \end{array}$$

47

$$\begin{array}{r} \text{d.} \quad \text{T O} \\ 67 \quad 12 \\ - 5 \quad 5 \\ \hline \end{array}$$

17

$$\begin{array}{r} \text{e.} \quad \text{T O} \\ 44 \\ + 26 \\ \hline \end{array}$$

70

$$\begin{array}{r} \text{f.} \quad \text{T O} \\ \quad \quad 9 \\ + 4 \quad 9 \\ \hline \end{array}$$

58

$$\begin{array}{r} \text{g.} \quad \text{T O} \\ 24 \\ + 28 \\ \hline \end{array}$$

52

$$\begin{array}{r} \text{h.} \quad \text{T O} \\ 67 \quad 17 \\ - 3 \quad 9 \\ \hline \end{array}$$

38

$$\begin{array}{r} \text{i.} \quad \text{T O} \\ 45 \quad 16 \\ - 2 \quad 8 \\ \hline \end{array}$$

28

$$\begin{array}{r} \text{j.} \quad \text{T O} \\ 33 \\ + \quad \quad 8 \\ \hline \end{array}$$

41

$$\begin{array}{r} \text{k.} \quad \text{T O} \\ 56 \quad 16 \\ - 1 \quad 7 \\ \hline \end{array}$$

49

$$\begin{array}{r} \text{l.} \quad \text{T O} \\ 45 \quad 11 \\ - 3 \quad 9 \\ \hline \end{array}$$

12

$$\begin{array}{r} \text{m.} \quad \text{T O} \\ 15 \\ + 68 \\ \hline \end{array}$$

83

$$\begin{array}{r} \text{n.} \quad \text{T O} \\ 89 \quad 15 \\ - 4 \quad 8 \\ \hline \end{array}$$

47

$$\begin{array}{r} \text{o.} \quad \text{T O} \\ 14 \\ + 76 \\ \hline \end{array}$$

90



Addition and subtraction

Checking the answers.



Add...

$$\begin{array}{r} 1 \\ 26 \\ + 38 \\ \hline 64 \end{array}$$

Then, subtract to check the answer.

$$\begin{array}{r} 5 \quad 1 \\ \cancel{6} \quad 4 \\ - 38 \\ \hline 26 \end{array}$$



Subtract...

$$\begin{array}{r} 3 \quad 1 \\ 42 \\ - 28 \\ \hline 14 \end{array}$$

Then, add to check the answer.

$$\begin{array}{r} 1 \quad 4 \\ + 28 \\ \hline 42 \end{array}$$

1. Complete, then check.

<p>a.</p> $\begin{array}{r} \text{T O} \\ 35 \\ + 47 \\ \hline 82 \end{array}$	<p>Check</p> $\begin{array}{r} \text{T O} \\ \cancel{7}8 \quad 2 \\ - 47 \\ \hline 35 \end{array}$	<p>b.</p> $\begin{array}{r} \text{T O} \\ 50 \\ + 39 \\ \hline 89 \end{array}$	<p>Check</p> $\begin{array}{r} \text{T O} \\ 89 \\ - 39 \\ \hline 50 \end{array}$	<p>c.</p> $\begin{array}{r} \text{T O} \\ 48 \\ + 29 \\ \hline 77 \end{array}$	<p>Check</p> $\begin{array}{r} \text{T O} \\ 77 \\ - 29 \\ \hline 48 \end{array}$
<p>d.</p> $\begin{array}{r} \text{T O} \\ 62 \\ - 41 \\ \hline 21 \end{array}$	<p>Check</p> $\begin{array}{r} \text{T O} \\ 21 \\ + 41 \\ \hline 62 \end{array}$	<p>e.</p> $\begin{array}{r} \text{T O} \\ 72 \\ - 38 \\ \hline 34 \end{array}$	<p>Check</p> $\begin{array}{r} \text{T O} \\ 34 \\ + 38 \\ \hline 72 \end{array}$	<p>f.</p> $\begin{array}{r} \text{T O} \\ 54 \\ - 26 \\ \hline 28 \end{array}$	<p>Check</p> $\begin{array}{r} \text{T O} \\ 28 \\ + 26 \\ \hline 54 \end{array}$

A balloon filled with numbers

Work out the sums on this hot air balloon. Write an answer in each cloud. Colour all answers that are even with red and the odd ones with yellow. One has been done for you.

The hot air balloon is divided into sections with the following arithmetic problems and answers:

- a.**
$$\begin{array}{r} 104 \\ + 86 \\ \hline 190 \end{array}$$
 Answer: 190 (Even, red)
- b.**
$$\begin{array}{r} 11 \\ + 8 \\ \hline 19 \end{array}$$
 Answer: 19 (Odd, yellow)
- c.**
$$\begin{array}{r} 108 \\ - 103 \\ \hline 5 \end{array}$$
 Answer: 5 (Odd, yellow)
- d.**
$$\begin{array}{r} 360 \\ - 240 \\ \hline 120 \end{array}$$
 Answer: 120 (Even, red)
- e.**
$$\begin{array}{r} 216 \\ + 154 \\ \hline 370 \end{array}$$
 Answer: 370 (Even, red)
- f.**
$$\begin{array}{r} 810 \\ + 78 \\ \hline 888 \end{array}$$
 Answer: 888 (Even, red)
- g.**
$$\begin{array}{r} 516 \\ + 215 \\ \hline 731 \end{array}$$
 Answer: 731 (Odd, yellow)
- h.**
$$\begin{array}{r} 39 \\ + 11 \\ \hline 50 \end{array}$$
 Answer: 50 (Even, red)
- i.**
$$\begin{array}{r} 27 \\ + 8 \\ \hline 35 \end{array}$$
 Answer: 35 (Odd, yellow)

The basket contains the following subtraction problem and answer:

$$\begin{array}{r} 210 \\ - 3 \\ \hline 17 \end{array}$$

Answer: 17 (Odd, yellow)

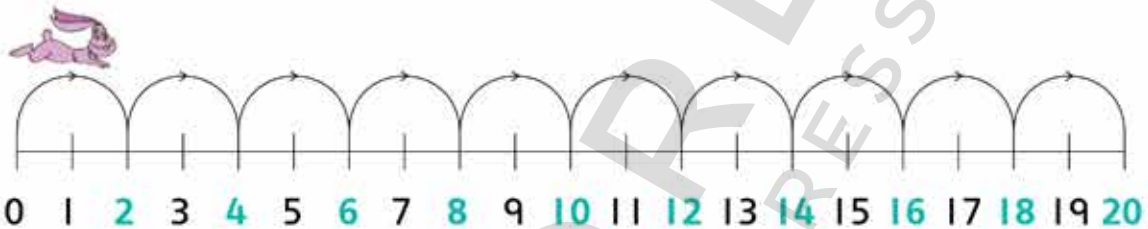
Surrounding clouds contain the following answers:

- 190 (Even, red)
- 310 (Even, red)
- 5 (Odd, yellow)
- 358 (Even, red)
- 120 (Even, red)
- 751 (Odd, yellow)
- 50 (Even, red)
- 17 (Odd, yellow)
- 35 (Odd, yellow)



Counting in 2s: even and odd numbers

The bunny is jumping in 2s.



1. Count in 2s and fill in the missing numbers.

a. 0, , 4, 6, , 10, 12

b. 6, , 10, 12, , 16, , 20

c. 20, , , , 28, ,

d. 32, , , 38, 40, ,

e. 50, , 54, , , ,

2. Look at the number grid. Colour all the even numbers red by counting in 2s. Colour all the odd numbers blue.

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	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

3. Look at the numbers below. Tick (✓) the even numbers and circle the odd numbers.

12 ✓	9	16 ✓	28 ✓	21	15
✓ 6	33	40 ✓	59	63	18 ✓
100 ✓	84 ✓	76 ✓	77	24 ✓	99

4. Four children have been to a festival. They each have a lucky coupon. Odd numbers win a storybook. Even numbers win a puzzle set. What has each child won?



Sameer



Laila



Rida



Rehan

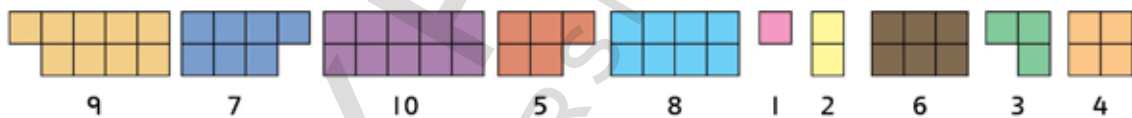
a. Sameer

b. Laila

c. Rida

d. Rehan

5. Look at the even and odd number tiles.



Add and write 'odd' or 'even' in the boxes.

a. $7 + 3$  =

b. $6 + 1$  =

c. $7 + 4$  =

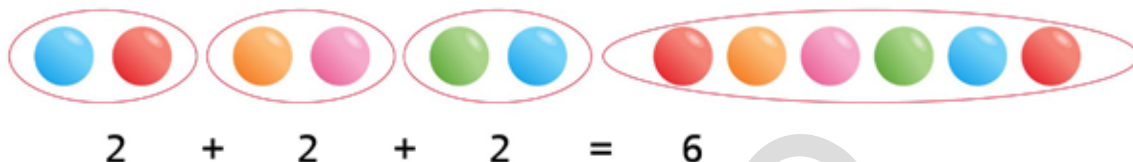
d. $8 + 8$  =

Multiplication



Add in 2s. Write $2 + 2 + 2 = 6$.

In this sum, we have 3 groups of 2.



We can write this sum in a shorter form.

3 groups of 2 are 6, or three 2s are 6, or $3 \times 2 = 6$.

We use a special sign (\times) to write this sum. It is called the multiplication sign.



NOTE

Multiplication is a process of repeated addition. The symbol for multiplication is ' \times '.

Grouping in 2s

To show how many 2s there are in a number, make groups of 2 and count them.

For example:

How many socks?

6

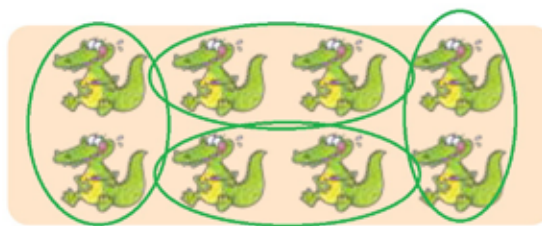
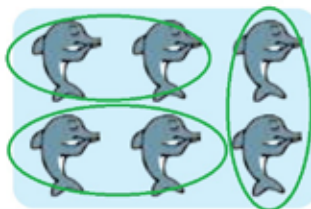
How many groups of 2 socks?

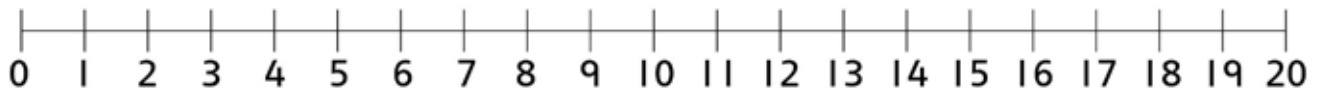
3



Three 2s are 6, or there are three 2s in 6.

1. Circle these in groups of 2.





2. Write in the empty boxes.
One has been done for you.

a. $2 + 2 + 2$ 3×2 6

b. $2 + 2 + 2 + 2$ 4×2 8

c. $2 + 2 + 2 + 2 + 2$ 5×2 10

d. $2 + 2 + 2 + 2 + 2 + 2 + 2$ 7×2 14

e. $2 + 2 + 2$ 3×2 6

3. Multiply to answer these. One has been done for you.

a. How many eyes do 4 cats have? $4 \times 2 = 8$

b. How many feet do 2 boys have? $2 \times 4 = 8$

c. How many hands do 6 girls have? $2 \times 6 = 12$

d. How many ears do 9 tigers have? $9 \times 2 = 18$

Multiplication: 2s

When we see 'x', we say 'times'.

4. a.



2 cupcakes on a plate.
2 plates on the table.
How many cupcakes
in all?

$$2 \times 2 = 4$$

Say: 2 times 2 is 4, or two 2s are 4.

b.



2 fish in a fish tank.
3 fish tanks in total.
How many fish in all?

$$3 \times 2 = 6$$

Say: 3 times 2 is 6, or three 2s are 6.

c.



2 bows on a head.
4 heads in the window.
How many bows in all?

$$4 \times 2 = 8$$

Say: 4 times 2 is 8, or four 2s are 8.

- d. 2 fish in a bowl and 5 bowls on the shelf.
How many fish in total?

$$5 \times 2 = 10$$



Say: 5 times 2 is 10, or five 2s are 10.

5. Fill in the missing numbers.

- a. How many wheels?

$$3 \times 2 = 6$$

Say: Three 2s are 6



- b. How many ears?

$$5 \times 2 = 10$$

Say: Five 2s are 10



- c. How many feet?







$$6 \times 2 = 12$$

Say: Six 2s are 12



2 times table

6. Complete the times table and learn.

Look	Write, then say	Write
	one 2 is 2	$1 \times 2 = 2$
	two 2s are 4	$2 \times 2 = 4$
	three 2s are	$3 \times 2 = 6$
	four 2s are	$4 \times 2 = 8$
	five 2s are	$5 \times 2 = 10$
	six 2s are	$6 \times 2 = 12$
	seven 2s are	$7 \times 2 = 14$
	eight 2s are	$8 \times 2 = 16$
	nine 2s are	$9 \times 2 = 18$
	ten 2s are	$10 \times 2 = 20$

Multiplication: 2s

7. Multiply and find the answers.

a. $5 \times 2 = 10$

b. $6 \times 2 = 12$

c. $8 \times 2 = 16$

d. $9 \times 2 = 18$

e. $4 \times 2 = 8$

f. $2 \times 2 = 4$

g. 2 children each hold 2 balls. How many balls altogether?

$$\begin{array}{r} 2 \\ \times 2 \\ \hline 4 \end{array}$$

h. 3 girls have 2 sweets each. How many sweets altogether?

$$\begin{array}{r} 3 \\ \times 2 \\ \hline 6 \end{array}$$

i. 5 birds are on a tree. How many wings altogether?

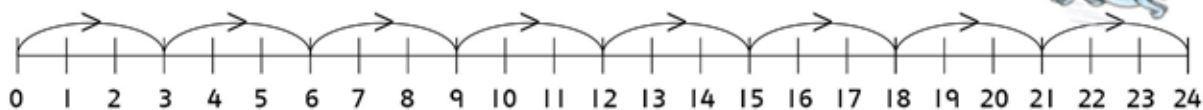
$$\begin{array}{r} 5 \\ \times 2 \\ \hline 10 \end{array}$$

j. 8 hens in a farm. How many feet altogether?

$$\begin{array}{r} 8 \\ \times 2 \\ \hline 16 \end{array}$$

Multiplication: 3s

Bobo the bunny, is jumping in 3s.



1. Count in 3s and write the missing numbers.

a. 0, 3, 6, 9, 12, 15, 18

b. 3, 6, 9, 12, 15, 18, 21

c. 12, 15, 18, 21, 24, 27, 30

d. 9, 12, 15, 18, 21, 24, 27

2. Count in 3s. Colour the squares blue.

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	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

3. Write in the empty boxes.

a.	$3 + 3$	\rightarrow	2×3	\rightarrow	6
b.	$3 + 3 + 3 + 3$	\rightarrow	4×3	\rightarrow	12
c.	$3 + 3 + 3 + 3 + 3 + 3$	\rightarrow	6×3	\rightarrow	18
d.	$3 + 3 + 3$	\rightarrow	3×3	\rightarrow	9
e.	$3 + 3 + 3 + 3 + 3$	\rightarrow	3×5	\rightarrow	15

4. Multiply and find the answers.

a. $8 \times 3 = 24$	b. $7 \times 3 = 21$
c. $5 \times 3 = 15$	d. $6 \times 3 = 18$

REMEMBER ✓
 'Tri' means three.

e. How many wheels on:

4 tricycles?	$4 \times 3 = 12$
3 tricycles?	$3 \times 3 = 9$
9 tricycles?	$9 \times 3 = 27$
6 tricycles?	$6 \times 3 = 18$



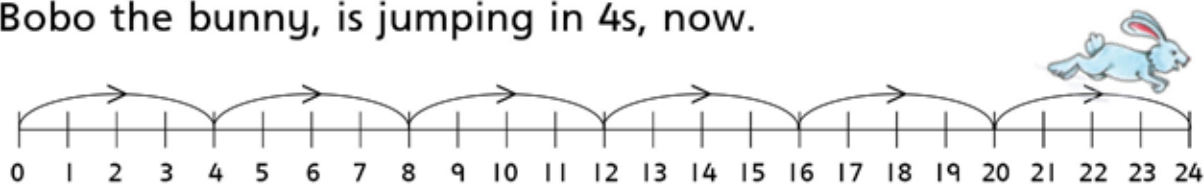
3 times table

5. Complete the times table and learn.

Look	Write, then say	Write
	one 3 is 3	$1 \times 3 = 3$
	two 3s are	$2 \times 3 = 6$
	three 3s are	$3 \times 3 = 9$
	four 3s are	$4 \times 3 = 12$
	five 3s are	$5 \times 3 = 15$
	six 3s are	$6 \times 3 = 18$
	seven 3s are	$7 \times 3 = 21$
	eight 3s are	$8 \times 3 = 24$
	nine 3s are	$9 \times 3 = 27$
	ten 3s are	$10 \times 3 = 30$

Multiplication: 4s

Bobo the bunny, is jumping in 4s, now.



1. Count in 4s and write the missing numbers.

a. 0, $\boxed{4}$, 8, $\boxed{12}$, 16, $\boxed{20}$, 24

b. 12, $\boxed{16}$, 20, 24, $\boxed{28}$, 32

c. 4, $\boxed{8}$, 12, $\boxed{16}$, 20, $\boxed{24}$, 28


d. 16, $\boxed{20}$, $\boxed{24}$, 28, $\boxed{32}$, $\boxed{36}$, 40

2. Count in 4s. Colour the squares in green.

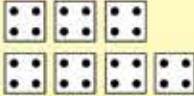
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100





3. Write in the boxes.

a.  $4 + 4 + 4 + 4$ → 4×4 → 16

b.  $4 + 4 + 4 + 4 + 4$ → 5×4 → 20

c.  $4 + 4 + 4 + 4 + 4 + 4 + 4$ → 7×4 → 28

d.  $4 + 4 + 4$ → 3×4 → 12

e.  $4 + 4 + 4 + 4 + 4 + 4$ → 6×4 → 24

4. Multiply and find the answers.

a. $6 \times 4 = 24$

b. $2 \times 4 = 8$

c. $10 \times 4 = 40$

d. $4 \times 4 = 16$

e. How many legs do the following have?

5 chairs $5 \times 4 = 20$

3 elephants $3 \times 2 = 6$







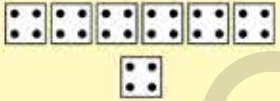

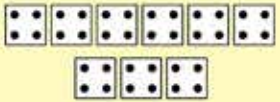

9 tigers $9 \times 2 = 18$

8 tables $8 \times 2 = 16$



4 times table

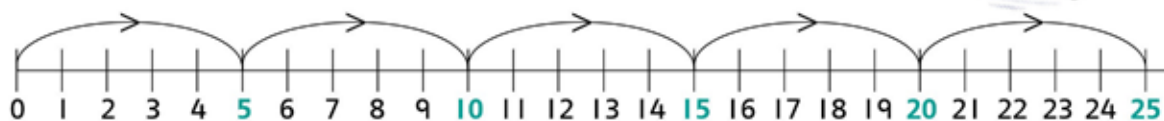
5. Complete the times table and learn.

Look	Write, then say	Write
	one 4 is 4	$1 \times 4 = 4$
	two 4s are 8	$2 \times 4 = 8$
	three 4s are 12	$3 \times 4 = 12$
	four 4s are 16	$4 \times 4 = 16$
	five 4s are 20	$5 \times 4 = 20$
	six 4s are 24	$6 \times 4 = 24$
	seven 4s are 28	$7 \times 4 = 28$
	eight 4s are 32	$8 \times 4 = 32$
	nine 4s are 36	$9 \times 4 = 36$
	ten 4s are	$10 \times 4 = 40$

Multiplication: 5s

Bobo the bunny's jumps are now very big.

He is jumping in 5s!



1. Count in 5s and write the missing numbers.

- a. 0, **5**, 10, **15**, 20, **25**, 30
- b. 10, **15**, **20**, 25, **30**, **35**, 40
- c. 5, **10**, 15, **20**, **25**, 30, **35**
- d. 20, **25**, **30**, **35**, 40, **45**, **50**

2. Count in 5s to Colour the squares in yellow.

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	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Multiplication: 5s

3. Multiply to answer these.

a. How many fingers on:

3 hands? $3 \times 5 = 15$

6 hands? $6 \times 5 = 30$

10 hands? $10 \times 5 = 50$

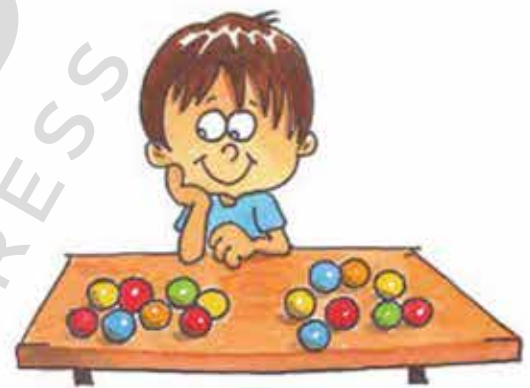
5 hands? $5 \times 5 = 25$

b. $7 \times 5 = 35$

c. $8 \times 5 = 40$

d. $2 \times 5 = 10$

e. $9 \times 5 = 45$



f. Each of 4 ostriches lay 5 eggs.
How many eggs altogether?

$$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$$

20

g. Each of 6 cats have 5 kittens.
How many kittens altogether?

$$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$$

30

h. There are 10 starfish on the beach. Each
starfish has 5 arms. How many arms
altogether?

$$\begin{array}{r} 10 \\ \times 5 \\ \hline \end{array}$$

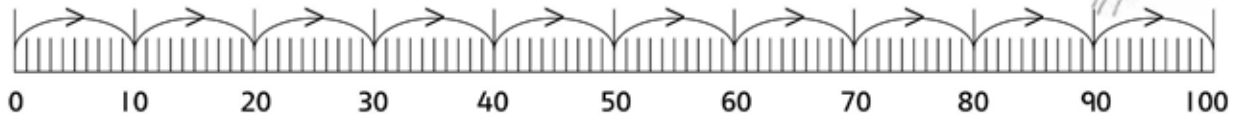
50

5 times table

4. Complete the times table and learn.

Look	Write, then say	Write
	one 5 is 5	$1 \times 5 = 5$
	two 5s are 10	$2 \times 5 = 10$
	three 5s are 15	$3 \times 5 = 15$
	four 5s are 20	$4 \times 5 = 20$
	five 5s are 25	$5 \times 5 = 25$
	six 5s are 30	$6 \times 5 = 30$
	seven 5s are 35	$7 \times 5 = 35$
	eight 5s are 40	$8 \times 5 = 40$
	nine 5s are 45	$9 \times 5 = 45$
	ten 5s are 50	$10 \times 5 = 50$

Multiplication: 10s



1. Count in 10s. Colour the squares in yellow.

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	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



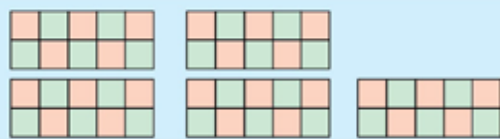
2. Multiply to complete these.



$$2 \times 10 = 20$$




$$6 \times 10 = 60$$



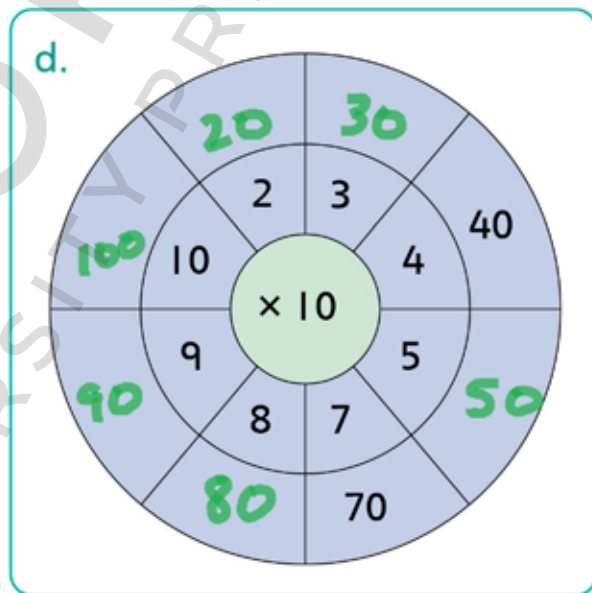
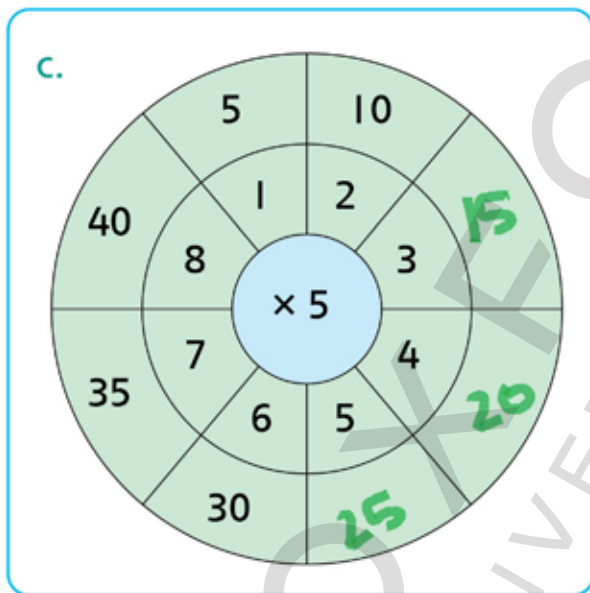
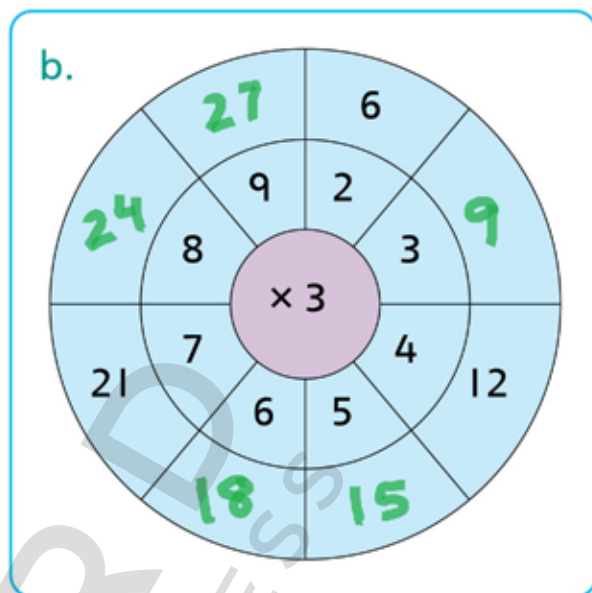
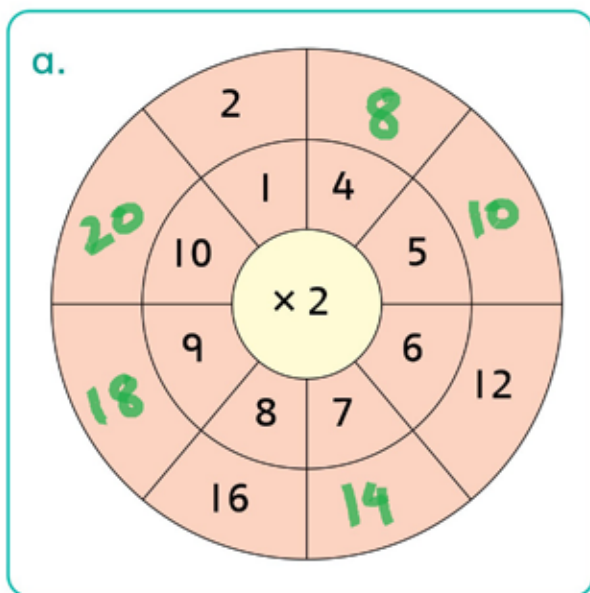
$$5 \times 10 = 50$$

10 times table

3. Complete the times table and learn.

Look	Write, then say:	Write
	one 10 is 10	$1 \times 10 = 10$
	two 10s are 20	$2 \times 10 = 20$
	three 10s are 30	$3 \times 10 = 30$
	four 10s are 40	$4 \times 10 = 40$
	five 10s are 50	$5 \times 10 = 50$
	six 10s are 60	$6 \times 10 = 60$
	seven 10s are 70	$7 \times 10 = 70$
	eight 10s are 80	$8 \times 10 = 80$
	nine 10s are 90	$9 \times 10 = 90$
	ten 10s are 100	$10 \times 10 = 100$

1. Multiply and fill in the missing numbers.



When you complete all the wheels, what do you notice?

You have created multiplication wheels for 2s, 3s, 5s, and 10s times table in the outside row!



2. Tick (✓) the odd numbers.
Circle ○ the even numbers.

15, 23, 42, 19, 58, 96, 69, 14, 33, 41, 50, 12

3. Write in the boxes.

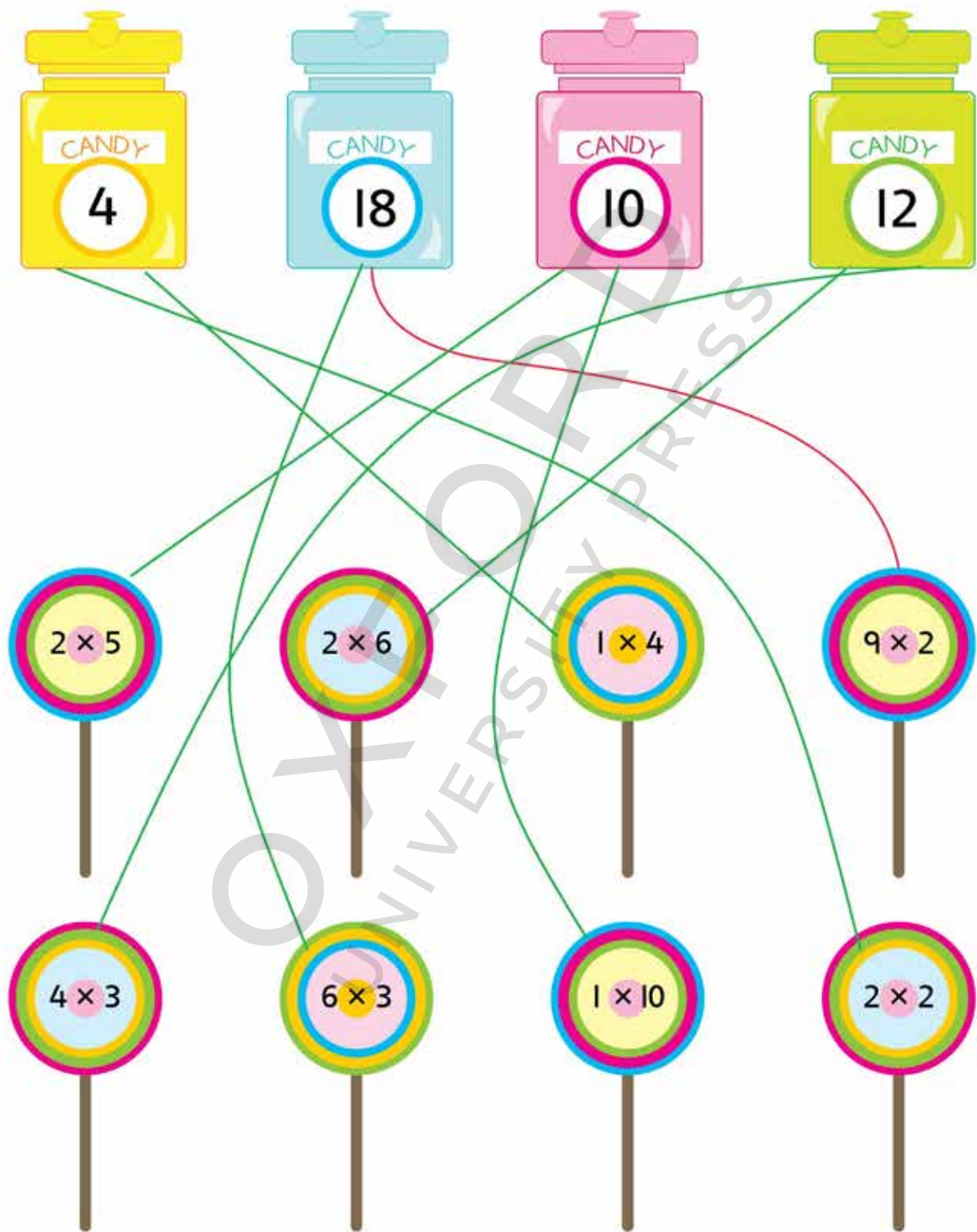
a.	$3 + 3 + 3 + 3$	→	4×3	→	12
b.	$5 + 5 + 5 + 5$	→	4×5	→	20
c.	$2 + 2 + 2 + 2 + 2 + 2$	→	6×2	→	12
d.	$10 + 10 + 10 + 10 + 10$	→	5×10	→	50

4. Join the sum to the correct answer.
One has been done for you.

7×2	60	24	4×3
8×3	12	27	3×5
5×4	14	90	9×3
6×10	20	15	9×10

Connections shown in the image:
 7×2 is connected to 14.
 8×3 is connected to 24.
 5×4 is connected to 20.
 6×10 is connected to 60.
 4×3 is connected to 12.
 3×5 is connected to 15.
 9×3 is connected to 27.
 9×10 is connected to 90.

5. Which lollipop goes into which candy jar?
Draw lines to show. One has been done for you.



Missing numbers

1. Fill in the missing numbers.

$4 \times 5 = 20$

$3 \times 3 = 9$

$6 \times 2 = 12$

$8 \times 4 = 32$

$4 \times 4 = 16$

$5 \times 5 = 25$

$$\begin{array}{r} 8 \\ \times 3 \\ \hline 24 \end{array}$$

$$\begin{array}{r} 9 \\ \times 5 \\ \hline 45 \end{array}$$

$$\begin{array}{r} 10 \\ \times 3 \\ \hline 30 \end{array}$$



$$\begin{array}{r} 7 \\ \times 4 \\ \hline 28 \end{array}$$

$$\begin{array}{r} 7 \\ \times 3 \\ \hline 21 \end{array}$$

$$\begin{array}{r} 10 \\ \times 5 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 6 \\ \times 5 \\ \hline 30 \end{array}$$

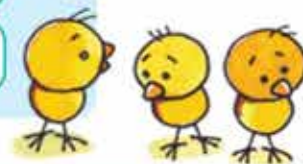
$$\begin{array}{r} 7 \\ \times 4 \\ \hline 28 \end{array}$$

$$\begin{array}{r} 9 \\ \times 3 \\ \hline 27 \end{array}$$

$$\begin{array}{r} 5 \\ \times 4 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 3 \\ \times 4 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 8 \\ \times 2 \\ \hline 16 \end{array}$$



Multiplication: vertical form

We can write our multiplications like this:



$5 \times 3 = 15$

5 threes are fifteen or Five 3s are 15.

We can also write like this:

$$\begin{array}{r} \text{T O} \\ 5 \\ \times 3 \\ \hline 15 \end{array}$$

1. Complete the sums. Say the tables to help you.

a. $\begin{array}{r} \text{T O} \\ 5 \\ \times 2 \\ \hline 10 \end{array}$

b. $\begin{array}{r} \text{T O} \\ 8 \\ \times 3 \\ \hline 24 \end{array}$

c. $\begin{array}{r} \text{T O} \\ 5 \\ \times 4 \\ \hline 20 \end{array}$

d. $\begin{array}{r} \text{T O} \\ 3 \\ \times 3 \\ \hline 9 \end{array}$

e. $\begin{array}{r} 10 \\ \times 5 \\ \hline 50 \end{array}$

f. $\begin{array}{r} 9 \\ \times 2 \\ \hline 18 \end{array}$

g. $\begin{array}{r} 4 \\ \times 4 \\ \hline 16 \end{array}$

h. $\begin{array}{r} 6 \\ \times 5 \\ \hline 30 \end{array}$

i. $\begin{array}{r} 6 \\ \times 4 \\ \hline 24 \end{array}$

j. $\begin{array}{r} 7 \\ \times 3 \\ \hline 21 \end{array}$

k. $\begin{array}{r} 8 \\ \times 4 \\ \hline 32 \end{array}$

l. $\begin{array}{r} 5 \\ \times 5 \\ \hline 25 \end{array}$

m. $\begin{array}{r} 9 \\ \times 3 \\ \hline 27 \end{array}$

n. $\begin{array}{r} 10 \\ \times 4 \\ \hline 40 \end{array}$

o. $\begin{array}{r} 9 \\ \times 5 \\ \hline 45 \end{array}$

p. $\begin{array}{r} 7 \\ \times 2 \\ \hline 14 \end{array}$

Higher order thinking skills

Multiplication by zero



Tiger has no money.
She has 0 money.



Crocodile has no
money.
He has 0 money.



Adil too, has no
money.
He has 0 money.

$$0 + 0 + 0 = 3 \times 0 = ?$$

How much money altogether?
No money at all! Zero rupees!

$$3 \times 0 = 0$$

What do you think 0×3 will be equal to?

1. Complete these.

a. $0 \times 4 = 0$

b. $6 \times 0 = 0$

c. $0 \times 1 = 0$

d. $5 \times 0 = 0$

e. $11 \times 0 = 0$

f. $10 \times 0 = 0$

2. Now complete these.

a. $5 \times 0 = 0$

b. $0 \times 7 = 0$

c. $2 \times 0 = 0$

d. $0 \times 10 = 0$

e. $0 \times 20 = 0$

f. $15 \times 0 = 0$

REMEMBER

Zero multiplied by any number is always zero.
Any number multiplied by zero is always zero.

Multiplication

Do you remember addition?



We see that there are 4 sets of 2.

We can write it like this.

$$4 \times 2 = 8$$

1. Now complete the following. One has been done for you.

a.



$$3 + 3 + 3 = 9$$

$$3 \times 3 = 9$$

b.



$$5 + 5 + 5 + 5 = 20$$

$$4 \times 5 = 20$$

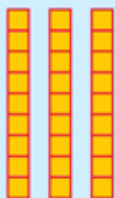
c.



$$2 + 2 + 2 + 2 + 2 = 10$$

$$5 \times 2 = 10$$

d.



$$9 + 9 + 9 = 27$$

$$3 \times 9 = 27$$

e.



$$6 + 6 + 6 + 6 + 6 = 30$$

$$5 \times 6 = 30$$

2. Solve these real-life story sums.

- a. There are 6 flower pots. Each flower pot has 4 flowers. How many flowers are there altogether?

$$\begin{array}{r} T \quad 0 \\ \quad 6 \\ \times \quad 4 \\ \hline 24 \end{array}$$



- b. Aslam has 8 bowls with 7 goldfish in each bowl. How many fish are there altogether?

$$\begin{array}{r} 8 \\ \times 7 \\ \hline 56 \end{array}$$



- c. 7 jackets are hanging in a shop. Each jacket has 6 buttons. How many buttons in all?

$$\begin{array}{r} 7 \\ \times 6 \\ \hline 42 \end{array}$$



- d. There are 8 buns in a packet. Rehan buys 4 packets. How many buns does he buy?

$$\begin{array}{r} 8 \\ \times 4 \\ \hline 32 \end{array}$$



- e. 7 leopards are climbing a tree. How many legs altogether?

$$\begin{array}{r} 7 \\ \times 2 \\ \hline 14 \end{array}$$



- f. 8, 6, 4, 9: multiply the greatest number by the smallest number.

$$\begin{array}{r} 9 \\ \times 4 \\ \hline 36 \end{array}$$



5

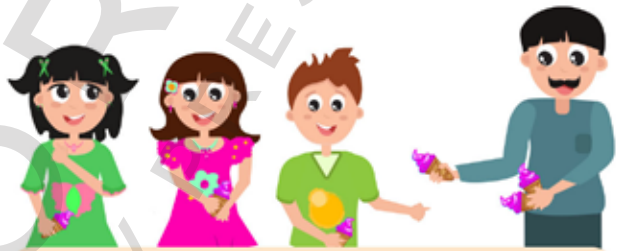
Division



Moiz, Salima, and Adiba buy 6 ice cream cones. They want to share them equally. How many does each get?



First, the ice cream man picks 3 cones. Then, he gives 1 ice cream cone to each child.



3 ice cream cones are left.

Then, he takes three more. He gives each child 1 more ice cream cone.

Kids! Throw the wrappers in the dust bin.



Each child has 2 ice cream cones.

There are 0 ice cream cones left.

We say: 6 ice cream cones divided by 3 equals 2 ice cream cones. We write: $6 \div 3 = 2$.

Division

Kiran has a packet of 8 stickers. She wants to paste 2 stickers on each of her books.

How many books will have stickers on them?

Lets start.



Kiran takes away 2 stickers. She puts them on the first book.

$$\begin{array}{r} 8 \\ - 2 \\ \hline \end{array}$$

6 stickers left

Then, she takes away 2 more. She puts them on the second book.

$$\begin{array}{r} 6 \\ - 2 \\ \hline \end{array}$$

4 stickers left

2 stickers are left now. Kiran puts them on the fourth book.

$$\begin{array}{r} 2 \\ - 2 \\ \hline \end{array}$$

0 stickers left

Now, she takes away 2 more. She puts them on the third book.

$$\begin{array}{r} 4 \\ - 2 \\ \hline \end{array}$$

2 stickers left

How many books have stickers? **4** books

We say: 8 stickers divided by 2 equals **4** stickers

Write: $8 \div 2 =$ **4**

Division

Here are 10 balloons. Draw 2 balloons on each stick.
How many sticks have balloons on them?



$10 - 2 = 8$

$8 - 2 = 6$

$6 - 2 = 4$

$4 - 2 = 2$

$2 - 2 = 0$

$10 \div 2 = 5$

Here are 6 bows.
Draw 2 bows in each girl's hair.
How many girls have bows?



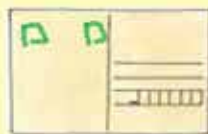
$6 - 2 = 4$

$4 - 2 = 2$

$2 - 2 = 0$

$6 \div 2 = 3$

Here are 8 stamps.
Draw 2 stamps on each postcard.
How many postcards get stamps?



$8 - 2 = 6$

$6 - 2 = 4$

$4 - 2 = 2$

$2 - 2 = 0$

$8 \div 2 = 4$

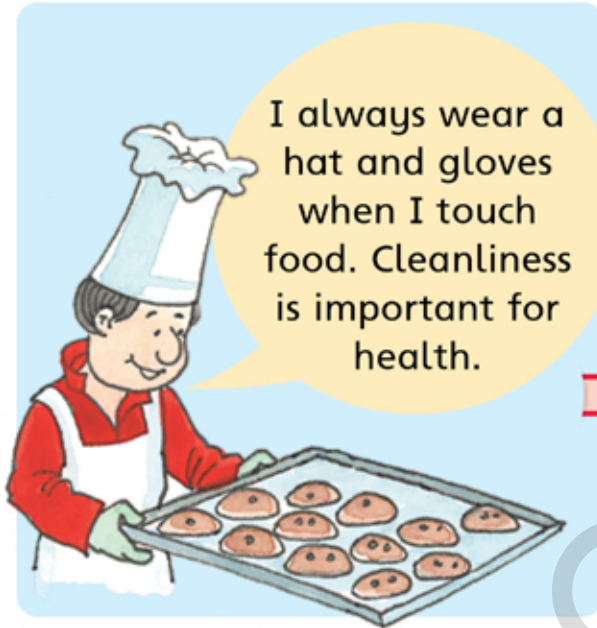
Division: equal groups

In Ali's store, buns are packed in 4s.
How many packs can Ali make with
12 buns?



NOTE

Division is a process of repeated subtraction. The symbol for division is '÷'.


$$\begin{array}{r} 12 \\ - 4 \\ \hline 8 \end{array}$$

After 1 pack is made, 8 buns are left.

$$\begin{array}{r} 8 \\ - 4 \\ \hline 0 \end{array}$$

After 3 packs are made, 0 buns are left.

$$\begin{array}{r} 4 \\ - 4 \\ \hline 0 \end{array}$$

After 2 packs are made, 4 buns are left.

Ali can make 3 packs of 4 buns each with 12 buns.

We say: 12 buns divided by 4 equals 3 packs

Write: $12 \div 4 = 3$

Division or sharing equally

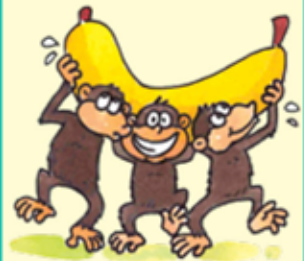
- a. 20 apples are shared equally between 5 boys.
How many apples does each boy get?

20 apples are shared equally between 5 boys: $20 \div 5 = 4$
Each boy gets 4 apples.



- b. 12 bananas are shared equally between 3 chimpanzees.
How many bananas does each chimpanzee get?

12 bananas are shared equally between 3 chimpanzees: $12 \div 3 = 4$
Each chimpanzee gets 4 bananas.



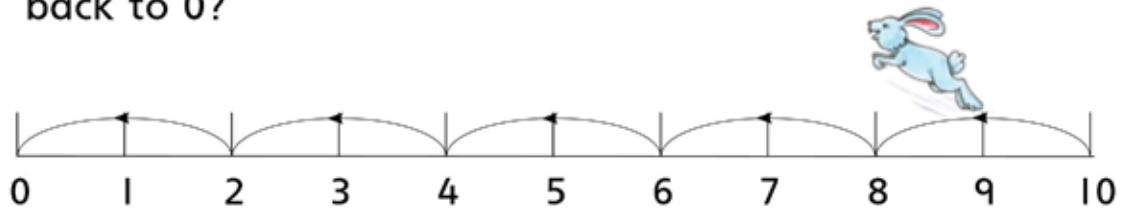
- c. 8 nuts are shared equally between 4 squirrels.
How many nuts does each squirrel get?

8 nuts shared equally between 4 squirrels: $8 \div 4 = 2$
Each squirrel gets 2 nuts.



Division: using a number line

1. How many jumps of 2 can Bobo the bunny, make from 10 back to 0?



Bobo can make 5 jumps of 2 each.

$$10 - 2 = 8$$

$$8 - 2 = 6$$

$$6 - 2 = 4$$

$$4 - 2 = 2$$

$$2 - 2 = 0$$

We say: 10 divided by 2 is 5 jumps.

We write: $10 \div 2 = 5$.

2. Use the number line below to answer these.

- a. How many jumps of 2 can be made from 8 back to 0?

$$8 \div 2 = 4$$

- b. How many jumps of 4 can be made from 20 back to 0?

$$20 \div 4 = 5$$

- c. How many jumps of 3 can be made from 15 back to 0?

$$15 \div 3 = 5$$



3. Divide the numbers to answer these.
The number line will help you.



a. $16 \div 2 = 8$

b. $25 \div 5 = 5$

c. $12 \div 4 = 3$

d. $18 \div 3 = 6$

e. $24 \div 3 = 8$

f. $14 \div 2 = 7$

g. $8 \div 2 = 4$

h. $30 \div 5 = 6$

i. $20 \div 10 = 2$

j. $18 \div 2 = 9$

k. $9 \div 3 = 3$

l. $15 \div 3 = 5$

m. $15 \div 5 = 3$

n. $27 \div 3 = 9$

o. $16 \div 4 = 4$

p. $20 \div 2 = 10$

q. $10 \div 5 = 2$

r. $28 \div 4 = 7$

s. $4 \div 4 = 1$

t. $30 \div 3 = 10$

u. $12 \div 2 = 6$

v. $21 \div 3 = 7$



Real-life story sums: division

4. a. Sana has 12 ice cream cones. She wants to put 4 ice cream cones in each box.

How many boxes can Sana make?



We say: 12 divided by 4 = 3 boxes.



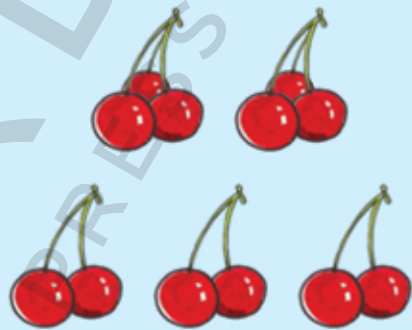
We write: $12 \div 4 = 3$

- b. How many threes are there in 6?

$$6 \div 3 = 2$$

How many twos are there in 6?

$$6 \div 2 = 3$$



- c. There are 8 flowers in sets, with 4 flowers in each set.

How many sets can be made?



We say: 8 divided by 4 equals 2 sets.



We write: $8 \div 4 = 2$

- d. How many threes are there in 15?

$$15 \div 3 = 5$$

How many fives are there in 15?

$$15 \div 5 = 3$$

Real-life story sums: division

5. Use division to answer the following.

- a. Ahmed shared his 10 comic books equally with Waqar. How many comic books does each boy have?

$$10 \div 2 = 5 \text{ books}$$

- b. 20 balloons are shared equally among 5 children. How many balloons does each child get?

$$20 \div 5 = 4 \text{ balloons}$$

- c. A baker puts 30 buns into 3 boxes. How many buns were in each box?

$$30 \div 3 = 10 \text{ buns}$$

- d. Anila has 18 stickers. She puts 3 stickers on each book. How many books have stickers on them?

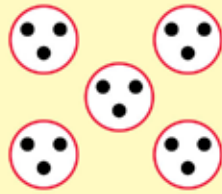
$$18 \div 3 = 6 \text{ stickers}$$

- e. 24 apples are divided equally among 6 children. How many apples does each child get?

$$24 \div 6 = 4 \text{ apples}$$

More about division

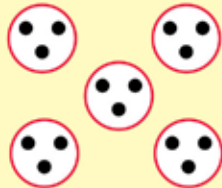
Write division like this:



$$15 \div 5 = 3$$

This form is fine for very simple sums.

We can also write them like this:



$$\begin{array}{r} 3 \\ 5 \overline{)15} \end{array}$$

This helps us do sums with BIG numbers.

Look at the new form. It is known as long division:

Here is the number to be divided. It is called the **dividend**.

$$\overline{)15} \text{ — Dividend}$$

Here is the number which divides. It is called the **divisor**.

$$\text{Divisor — } 5 \overline{)15}$$

The number which comes out at the end is the **quotient**.

(say: 'kwo-shunt')

$$\begin{array}{r} 3 \text{ — Quotient} \\ 5 \overline{)15} \end{array}$$

REMEMBER



Dividend

Divisor

Quotient

Long division

1. Complete these in your notebook.

a. $5 \overline{)15}$ **3**

b. $2 \overline{)14}$ **7**

c. $4 \overline{)24}$ **6**

d. $2 \overline{)16}$ **8**

e. $3 \overline{)12}$ **4**

f. $3 \overline{)24}$ **8**

g. $5 \overline{)25}$ **5**

h. $3 \overline{)27}$ **9**

i. $3 \overline{)18}$ **6**

j. $4 \overline{)28}$ **7**

k. $4 \overline{)36}$ **9**

l. $5 \overline{)40}$ **8**

m. $10 \overline{)30}$ **3**

n. $5 \overline{)50}$ **5**

o. $10 \overline{)60}$ **6**

p. $5 \overline{)45}$ **9**

q. $4 \overline{)32}$ **8**

r. $2 \overline{)18}$ **9**

s. $5 \overline{)35}$ **7**

t. $5 \overline{)30}$ **6**

u. $10 \overline{)40}$ **4**

v. $10 \overline{)80}$ **8**

w. $3 \overline{)30}$ **10**

x. $4 \overline{)20}$ **5**

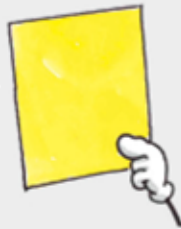


6

Fractions

Equal parts: cutting in half

1. Take a rectangular sheet of paper.



2. Fold it carefully down the middle. Both ends of the paper should touch!



3. Open it up. There is a line down the middle which dividing the paper into 2 equal parts.

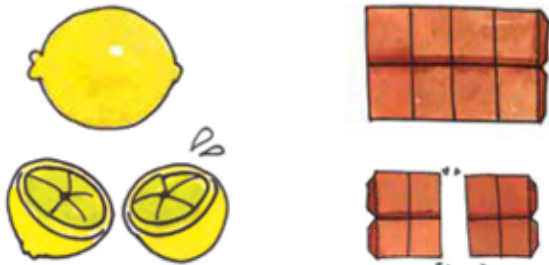


4. Check with your ruler to make sure each part is of the same width.

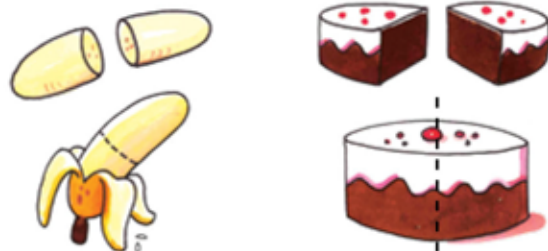
REMEMBER

A half means one out of two equal parts, or $\frac{1}{2}$.

A whole equals
a half + a half



Two halves equal
a whole cut in half



Equal parts: halves

- Look at these pictures.
Tick (✓) the objects that are cut in half.

REMEMBER ✓ Two halves are two equal parts of a whole.

- Tick (✓) the shapes cut in half, colour, and write $\frac{1}{2}$ in the correct place.

Equal parts: having collections

We can divide groups of things (collections) into halves too.

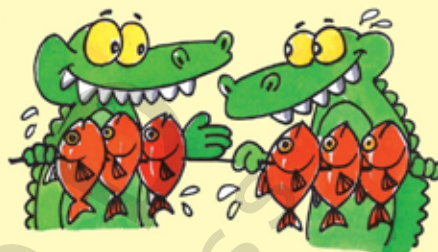
Adil has divided his marble collection into half.



How many marbles are in Adil's collection? 18

How many marbles in each half? 8

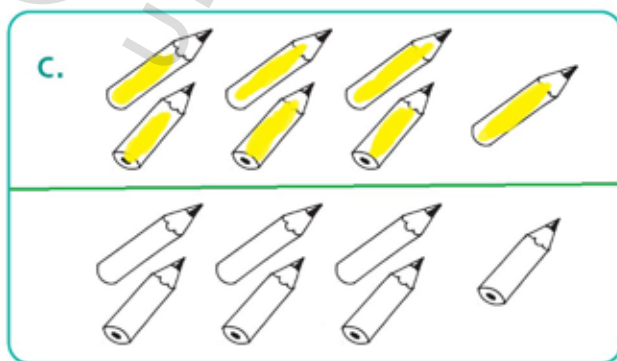
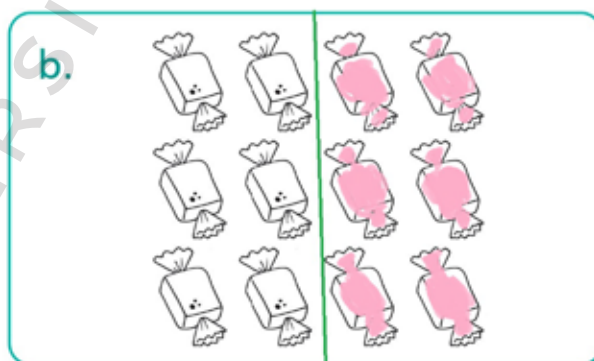
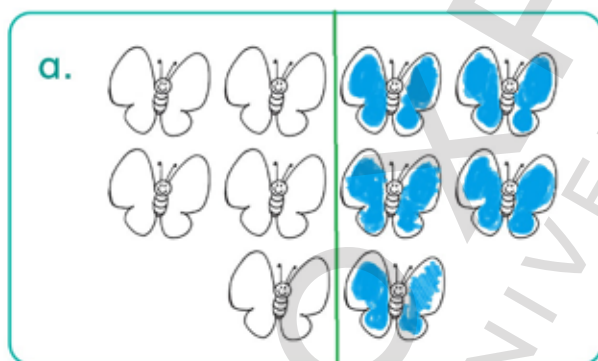
The crocodile has divided his fish catch into 2 equal parts: $\frac{1}{2}$ for his friend, and $\frac{1}{2}$ for himself!



How many fish in the whole catch? 6

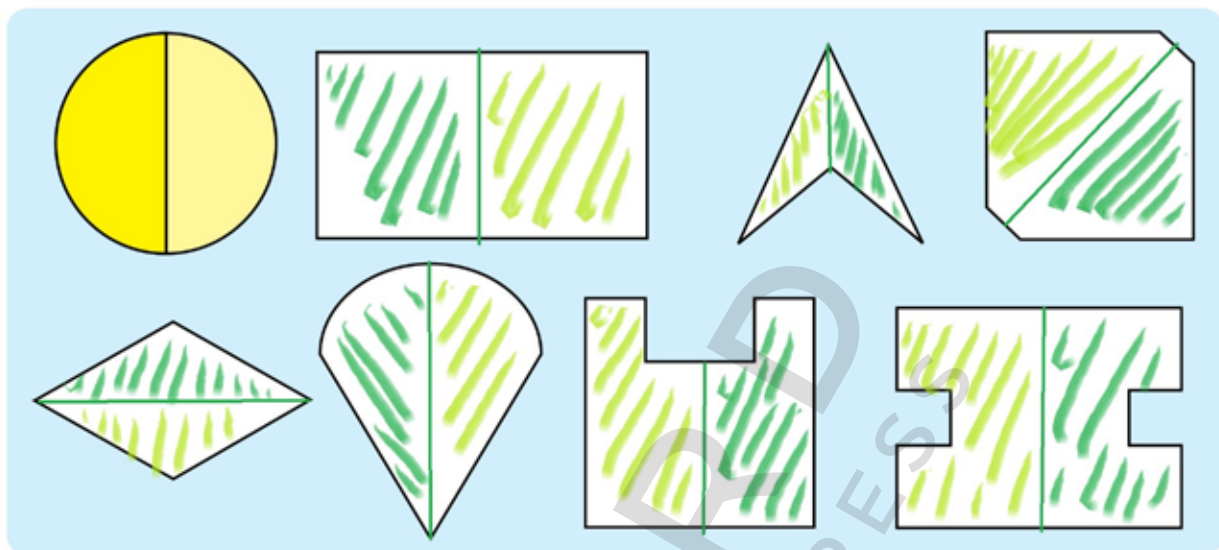
How many fish in each half? 3

3. Look at these collections. Draw lines to divide them in half. Then colour $\frac{1}{2}$ of each collection.



Cutting in halves

4. Cut each shape into half by drawing a line. Then colour each half, using different colours. One has been done for you.



5. Join the dots to draw the missing half. Then colour, using a different colour for each half. One has been done for you.



REMEMBER



If you place a mirror along the middle line, the other half will magically appear!

Equal parts: quarters

Do you remember how you folded the paper to show halves? Turn back to page 91.

Fold a sheet of paper the same way.
Then fold it again lengthwise.
Make sure the ends of the paper touch when you fold.

Now open up your sheet.
It will look like this:



Instead of 2 equal parts, there are now 4 equal parts.
(Check with your ruler to make sure they are equal.)

When we divide something into 4 equal parts, we cut it into quarters.

REMEMBER



A quarter means one part out of 4 equal parts or $\frac{1}{4}$.



one whole

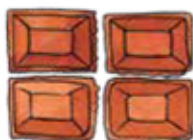


one whole

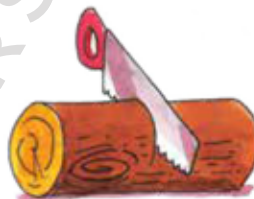
equals



4 quarters



4 quarters



one whole



one whole

equals



4 quarters



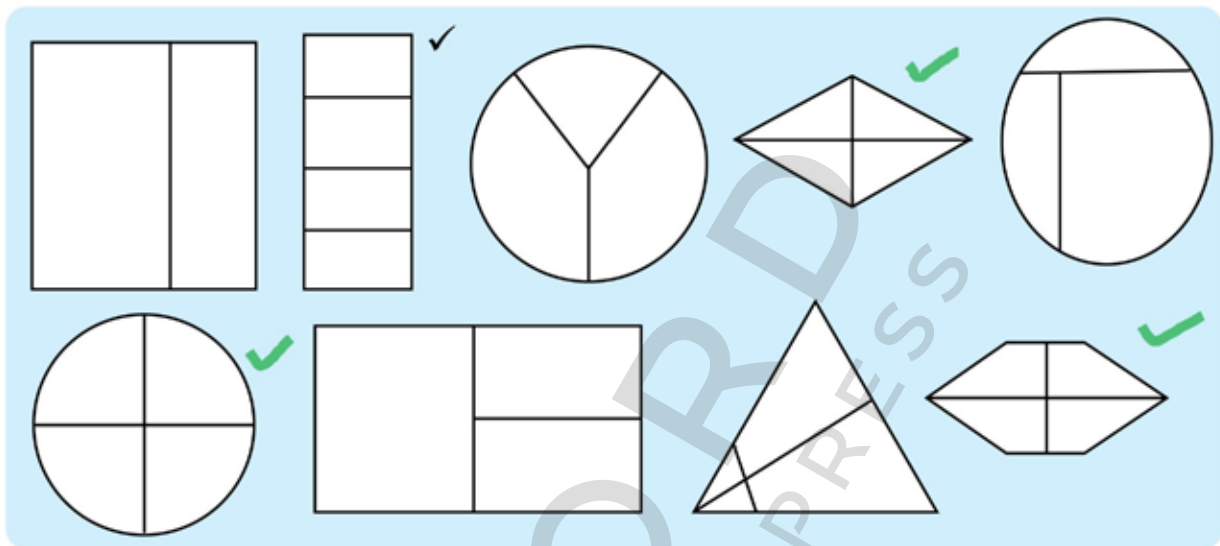
4 quarters

Equal parts: quarters

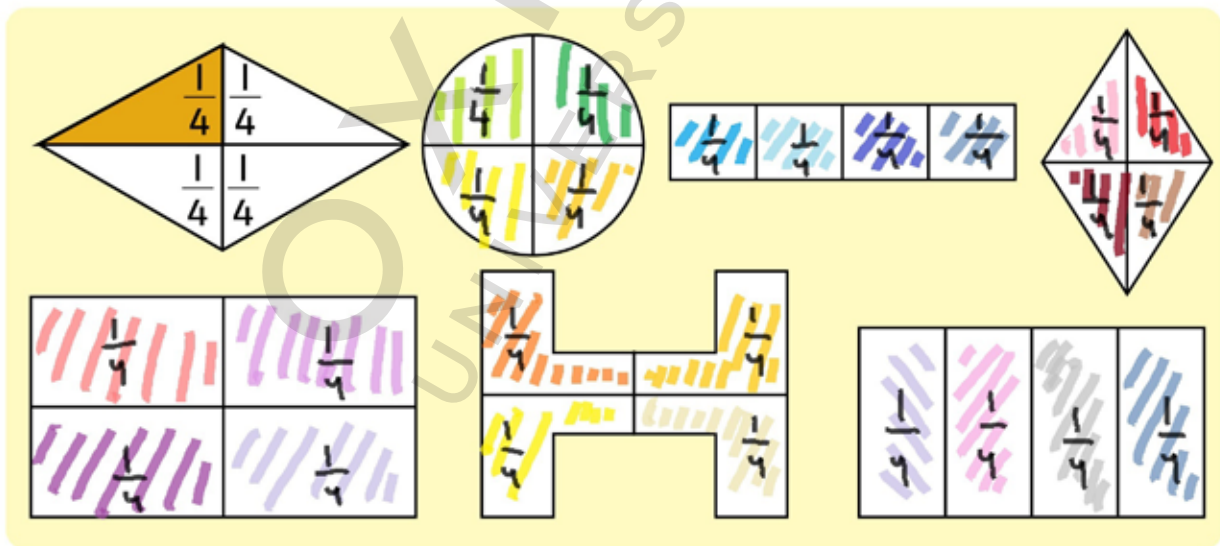
1. Tick (✓) the shapes that are divided into quarters.

REMEMBER

Quarters are 4 equal parts.



2. These shapes are all cut into quarters. Colour each quarter in a different colour. Then write $\frac{1}{4}$ where necessary.



REMEMBER

Four quarters make a whole.

Equal parts: quarters and halves

1. Look at these shapes. How much has been coloured, $\frac{1}{2}$ or $\frac{1}{4}$? Write in the box.

$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{4}$
 $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{4}$

2. Join the dots, then colour $\frac{1}{2}$ or $\frac{1}{4}$ (the box tells you which).

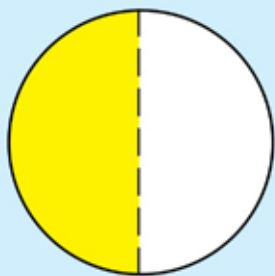
$\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{2}$
 $\frac{1}{4}$ $\frac{1}{2}$

Do you see what I see?
 2 quarters = 1 half; $\frac{1}{4} + \frac{1}{4} = \frac{1}{2}$
 2 halves = 1 whole; $\frac{1}{2} + \frac{1}{2} = 1$

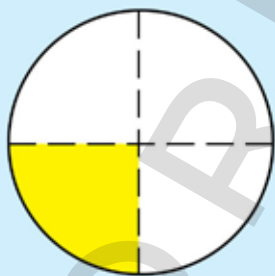
Equal parts: one third

We can divide shapes and objects in any number of equal parts.

When a shape or an object is divided in 2 equal parts, then each part is one half of the whole.



When a shape or an object is divided in 4 equal parts, then each part is one quarter of the whole.



When a shape or an object is divided in 3 equal parts, then each part is one-third of the whole.



Equal parts: unit fractions

Write the unit fractions and their name.

One has been done for you.

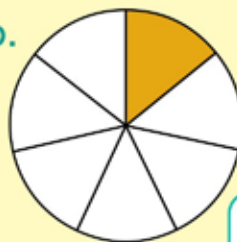
a.



$$\frac{1}{8}$$

one-eighth

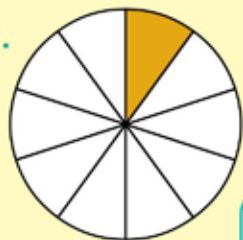
b.



$$\frac{1}{7}$$

one - seventh

c.



$$\frac{1}{10}$$

one - tenth

d.





$$\frac{1}{9}$$


one - ninth


More fractions


1. Represent the given fraction by colouring the given shapes correctly.


a.  $\frac{2}{5}$

b.  $\frac{4}{6}$

c.  $\frac{3}{7}$

d.  $\frac{5}{8}$

e.  $\frac{1}{9}$

f.  $\frac{9}{10}$

2. Name the given fractions.

a. $\frac{4}{5}$
four-fifths

b. $\frac{3}{6}$
three-sixths

c. $\frac{5}{7}$
five-sevenths

d. $\frac{2}{3}$
two-thirds

e. $\frac{1}{3}$
one-third

f. $\frac{9}{10}$
nine-tenths

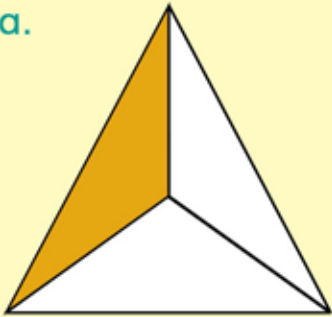
g. $\frac{1}{4}$
one-fourth

h. $\frac{2}{9}$
two-ninths

More fractions

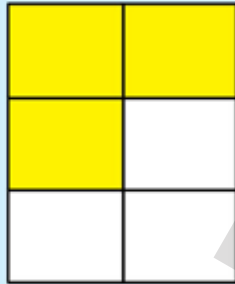
1. Write fraction for the given shaded parts.
One has been done for you.

a.



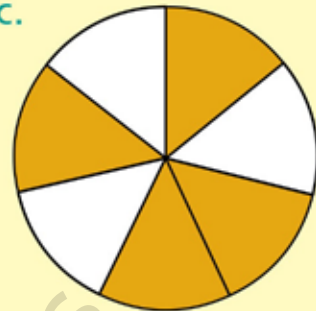
$$\text{Fraction} = \frac{1}{3}$$

b.



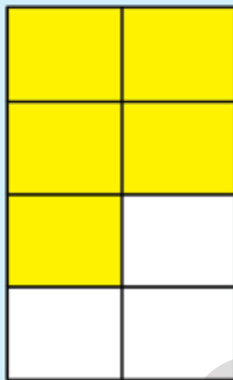
$$\text{Fraction} = \frac{3}{6}$$

c.



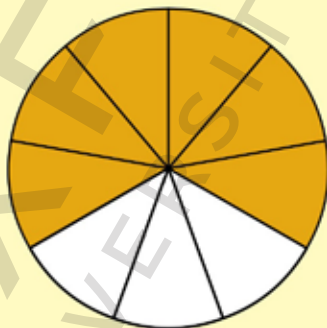
$$\text{Fraction} = \frac{4}{7}$$

d.



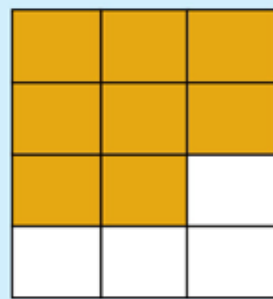
$$\text{Fraction} = \frac{5}{8}$$

e.



$$\text{Fraction} = \frac{6}{9}$$

f.



$$\text{Fraction} = \frac{8}{12}$$



7







Measurement

Length

Measurement: centimetre

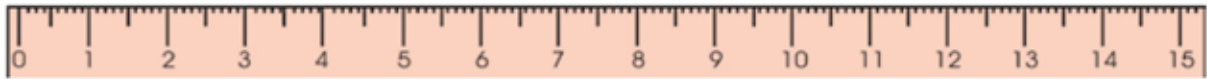
1. Fill in the centimetre marks on the ruler.
Measure and compare the lengths of each object and write in the box.



- a.  3 cm
- b.  7 cm
- c.  9 cm
- d.  8 cm
- e.  13 cm
- f.  5 cm
- g. Which object is the shortest? Paperclip
- h. Which object is the longest? Paintbrush

Length

Do you remember metres and centimetres?



A short ruler
is 15 cm long.

A metre ruler
is 100 cm long.

1. Would you use metres (m) or centimetres (cm) to measure the following?

- a. The length of your classroom: metres (m)
- b. The height of your teacher: meters (m)
- c. The length of your pencil: centimeters (cm)
- d. The length of an eraser: centimeter (cm)
- e. The height of the board: meter (m)
- f. The length of your foot: centimeter (cm)

2. Take a ruler. Measure these lines. Write the length of each:

a. 4 cm

b. 6 cm

c. 3 cm

3. Now, draw straight lines of the following lengths in your notebook, using a ruler.

a. 3 cm

b. 7 cm

c. 5 cm

d. 4 cm

e. 2 cm

f. 8 cm

g. 1 cm

h. 6 cm

Higher order thinking skills

Length: converting cm to m



Baby crocodile was 72 cm long at 1 year
The next year, it grew 49 cm
At 2 years, it was 121 cm long

$$121 \text{ cm} = 100 \text{ cm} + 21 \text{ cm}$$

$$121 \text{ cm} = 1 \text{ m} + 21 \text{ cm}$$

$$121 \text{ cm} = 1 \text{ m } 21 \text{ cm}$$

REMEMBER



1 metre = 100 centimetres

So, baby crocodile was 1 m 21 cm long, when it was 2 years old.

$$138 \text{ cm} = 1 \text{ m } 38 \text{ cm}$$

$$107 \text{ cm} = 1 \text{ m } 7 \text{ cm}$$

$$110 \text{ cm} = 1 \text{ m } 10 \text{ cm}$$

$$172 \text{ cm} = 1 \text{ m } 72 \text{ cm}$$

$$246 \text{ cm} = 2 \text{ m } 46 \text{ cm}$$

$$280 \text{ cm} = 2 \text{ m } 80 \text{ cm}$$

$$308 \text{ cm} = 3 \text{ m } 8 \text{ cm}$$

$$522 \text{ cm} = 5 \text{ m } 22 \text{ cm}$$

REMEMBER



1 m = 100 cm

$$2 \text{ m } 94 \text{ cm} = 294 \text{ cm}$$

$$9 \text{ m} = 900 \text{ cm}$$

$$14 \text{ m} = 1400 \text{ cm}$$

$$3 \text{ m } 30 \text{ cm} = 330 \text{ cm}$$

$$11 \text{ m} = 1100 \text{ cm}$$

$$5 \text{ m } 1 \text{ cm} = 501 \text{ cm}$$

$$6 \text{ m} = 600 \text{ cm}$$

$$1 \text{ m } 19 \text{ cm} = 119 \text{ cm}$$

$$1 \text{ m } 5 \text{ cm} = 105 \text{ cm}$$

$$3 \text{ m } 96 \text{ cm} = 396 \text{ cm}$$

$$4 \text{ m} = 400 \text{ cm}$$

$$20 \text{ m} = 2000 \text{ cm}$$

Length

It is easy to add lengths.

This toy snake 1 is
75 cm long.



That toy snake 2 is
22 cm long.



How long would they be when placed end to end?

First we
add
ones.

$$\begin{array}{r} 75 \text{ cm} \\ + 22 \text{ cm} \\ \hline 7 \text{ cm} \end{array}$$

Then
we add
tens.

$$\begin{array}{r} 75 \text{ cm} \\ + 22 \text{ cm} \\ \hline 97 \text{ cm} \end{array}$$

Answer:

The two toy snakes are 97 cm long when placed end to end.

1. Now add these.

a. $\begin{array}{r} 25 \text{ m} \\ + 2 \text{ m} \\ \hline 30 \text{ m} \end{array}$

b. $\begin{array}{r} 18 \text{ cm} \\ + 67 \text{ cm} \\ \hline 85 \text{ cm} \end{array}$

c. $\begin{array}{r} 37 \text{ m} \\ + 52 \text{ m} \\ \hline 89 \text{ m} \end{array}$

d. $\begin{array}{r} 48 \text{ cm} \\ + 38 \text{ cm} \\ \hline 86 \text{ cm} \end{array}$

e. $\begin{array}{r} 11 \text{ m} \\ + 51 \text{ m} \\ \hline 62 \text{ m} \end{array}$

f. $\begin{array}{r} 18 \text{ cm} \\ + 36 \text{ cm} \\ \hline 54 \text{ cm} \end{array}$

g. $\begin{array}{r} 58 \text{ m} \\ + 64 \text{ m} \\ \hline 122 \text{ m} \end{array}$

h. $\begin{array}{r} 76 \text{ cm} \\ + 17 \text{ cm} \\ \hline 93 \text{ cm} \end{array}$

i. $\begin{array}{r} 14 \text{ m} \\ + 22 \text{ m} \\ \hline 36 \text{ m} \end{array}$

j. $\begin{array}{r} 63 \text{ cm} \\ + 21 \text{ cm} \\ \hline 84 \text{ cm} \end{array}$

k. $\begin{array}{r} 36 \text{ m} \quad 76 \text{ cm} \\ + 42 \text{ m} \quad 19 \text{ cm} \\ \hline 78 \text{ m} \quad 95 \text{ cm} \end{array}$

Length

It is simple to find the difference between two lengths.

Look at the toy snakes on page 108.

What is the difference in their lengths?

How much longer is toy snake 1 than toy snake 2?

First we
work in
the ones
column.

$$\begin{array}{r} 75 \text{ cm} \\ - 22 \text{ cm} \\ \hline 3 \text{ cm} \end{array}$$

Then we
work in
the tens
column.

$$\begin{array}{r} 75 \text{ cm} \\ - 22 \text{ cm} \\ \hline 53 \text{ cm} \end{array}$$

Answer: The difference is 53 cm.
Toy snake 1 is 53 cm longer than toy snake 2.

2. Subtract the following.

a. $\begin{array}{r} 45 \text{ m} \\ - 3 \text{ m} \\ \hline 42 \text{ m} \end{array}$

b. $\begin{array}{r} 29 \text{ cm} \\ - 21 \text{ cm} \\ \hline 8 \text{ cm} \end{array}$

c. $\begin{array}{r} 37 \text{ m} \\ - 18 \text{ m} \\ \hline 19 \text{ m} \end{array}$

d. $\begin{array}{r} 54 \text{ cm} \\ - 44 \text{ cm} \\ \hline 10 \text{ cm} \end{array}$

e. $\begin{array}{r} 73 \text{ m} \\ - 43 \text{ m} \\ \hline 30 \text{ m} \end{array}$

f. $\begin{array}{r} 79 \text{ cm} \\ - 68 \text{ cm} \\ \hline 11 \text{ cm} \end{array}$

g. $\begin{array}{r} 18 \text{ m} \\ - 11 \text{ m} \\ \hline 7 \text{ m} \end{array}$

h. $\begin{array}{r} 49 \text{ cm} \\ - 32 \text{ cm} \\ \hline 17 \text{ cm} \end{array}$

i. $\begin{array}{r} 28 \text{ m} \\ - 17 \text{ m} \\ \hline 11 \text{ m} \end{array}$

j. $\begin{array}{r} 53 \text{ cm} \\ - 29 \text{ cm} \\ \hline 24 \text{ cm} \end{array}$

k. $\begin{array}{r} 55 \text{ m} \quad 64 \text{ cm} \\ - 45 \text{ m} \quad 37 \text{ cm} \\ \hline 10 \text{ m} \quad 27 \text{ cm} \end{array}$

Real-life story sums: length addition

It is easy to add m and cm:

Majid's Cloth Store
Majid sells 60 m of cloth on Tuesday.
He sells 85 m of cloth on Wednesday.
And he sells 23 m of cloth on Thursday.
Majid sells 168 m of cloth in 3 days.



3. Solve the following sums.

- a. Adil runs 80 m and Sami runs 50 m.
How many metres do they run altogether?

$$\begin{array}{r} 80 \text{ m} \\ + 50 \text{ m} \\ \hline 130 \text{ m} \end{array}$$

- b. The red fabric is 65 m long.
The yellow one is 28 m longer.
How long is the yellow fabric?

$$65 \text{ m} + 28 \text{ m} = 93 \text{ m}$$

- c. Rahim painted 22 m of a wall before lunch and 19 m after lunch. How much of the wall did he paint altogether?

$$\begin{array}{r} 22 \text{ m} \\ + 19 \text{ m} \\ \hline 41 \text{ m} \end{array}$$

- d. Parvez jumped 84 cm high.
On his next turn he jumped 11 cm.
How high did he jump altogether?

$$\begin{array}{r} 84 \text{ cm} \\ + 11 \text{ cm} \\ \hline 95 \text{ cm} \end{array}$$

- e. Baby crocodile was 72 cm long.
After six months, it had grown 34 cm.
How long was it after six months?

$$\begin{array}{r} 72 \text{ cm} \\ + 34 \text{ cm} \\ \hline 106 \text{ cm} \end{array}$$

- f. Saima buys 50 cm of yellow ribbon and 25 cm of white ribbon. How much ribbon does she buy altogether?

$$\begin{array}{r} 50 \text{ cm} \\ + 25 \text{ cm} \\ \hline 75 \text{ cm} \end{array}$$

Real-life story sums: length subtraction

4. Subtract these.

a.

$$\begin{array}{r} 234 \\ - 24 \\ \hline 210 \end{array}$$

219 m

b.

$$\begin{array}{r} 234 \\ - 18 \\ \hline 216 \end{array}$$

16 m

c.

$$\begin{array}{r} 892 \\ - 57 \\ \hline 835 \end{array}$$

35 m

d.

$$\begin{array}{r} 450 \\ - 29 \\ \hline 421 \end{array}$$

21 m

e.

$$\begin{array}{r} 1014 \\ - 76 \\ \hline 938 \end{array}$$

38 m

5. Solve the following sums.

- a. Ismat is 90 cm tall. Bina is 82 cm tall. How much taller is Ismat than Bina?

$$\begin{array}{r} 90 \\ - 82 \\ \hline 8 \end{array}$$

8 cm

- b. Jamil runs 100 m while Danish runs 72 m. How much further does Jamil run than Danish?

$$\begin{array}{r} 100 \\ - 72 \\ \hline 28 \end{array}$$

28 m

- c. A lizard is 45 cm long. A snake is 82 cm long. How much longer is the snake than the lizard?

$$\begin{array}{r} 82 \\ - 45 \\ \hline 37 \end{array}$$

37 cm

- d. A rope is 109 m long. Sameer cuts off 17 m. How much of the rope is left?

$$\begin{array}{r} 109 \\ - 17 \\ \hline 92 \end{array}$$

92 m

- e. Rumana sets out to run 200 m. She has completed 162 m, how much further must she run?

$$\begin{array}{r} 200 \\ - 162 \\ \hline 38 \end{array}$$

38 m

- f. The height of a skyscraper is 120 m. A cinema hall next door is 96 m less high. How high is the cinema?

$$\begin{array}{r} 120 \\ - 96 \\ \hline 24 \end{array}$$

24 m

Length: kilometres

Look at the map:

How far is it from the Railway Station to the Post Office?

Central Road	1550 m
Ghazi Road	+ 450 m
Total distance	1000 m



We have a special word for 1000 metres. That word is **kilometre** or **km** for short.

'Kilo' means one thousand. So kilometre means one thousand metres.

Higher order thinking skills

REMEMBER

1000 m = 1 km; 1 km = 1000 m

a. $1100\text{ m} = 1000\text{ m} + 100\text{ m} = 1\text{ km} + 100\text{ m}$

b. $1300\text{ m} = 1000\text{ m} + 300\text{ m} = 1\text{ km} + 300\text{ m}$

c. $1260\text{ m} = 1000\text{ m} + 260\text{ m} = 1\text{ km} + 260\text{ m}$

d. $1140\text{ m} = 1000\text{ m} + 140\text{ m} = 1\text{ km} + 140\text{ m}$

e. $1815\text{ m} = 1000\text{ m} + 815\text{ m} = 1\text{ km} + 815\text{ m}$

f. $1029\text{ m} = 1000\text{ m} + 29\text{ m} = 1\text{ km} + 29\text{ m}$

Mass: how heavy?

Let us compare.



One teddy bear weighs the same as **3** apples.



A bunch of grapes weighs the same as **2** bananas.



2 small toy cars weigh the same as 1 big toy car.

Mass: remembering kilograms (kg)

Do you remember kilograms?

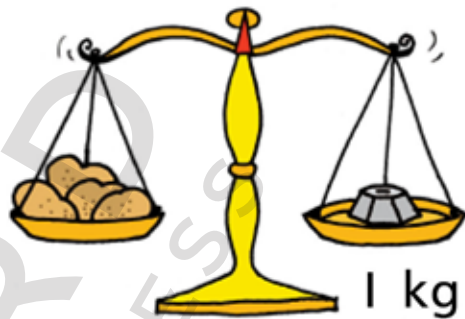


1 kg

Look at this 1 kg weight.

We often see it when we go shopping.

Here, the 1 kg weight has the same mass as the potatoes. So we know the potatoes weigh 1 kg.



We have learned that 'kilo' means one thousand. So 1 kilogram (1 kg) = 1000 grams (1000 g). One gram (1 g) is much less than 1 kg.

We use grams when we want to weigh light objects or small amounts of something.



Hold different weights in your hands and feel the mass. Then, hold different objects in your hands and guess their masses.



How heavy?

1. Find the mass of each toy on the scales. Write in the blanks provided.

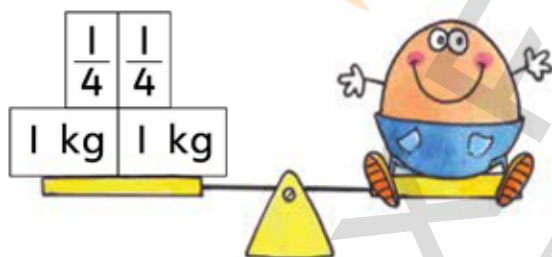
a.

I kilo or kilogram
balances four
quarter-kilos!



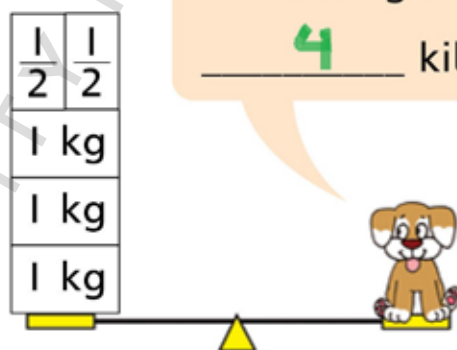
b.

I weigh $2\frac{1}{2}$ kilos.



c.

I weigh
4 kilos.



d.

I weigh
 $5\frac{1}{4}$ kilos.



e.

I weigh
 $2\frac{1}{4}$ kilos.



Mass: kg and g

2. Would you use a kg or a g weight to weigh these?
Guess the mass in each case and discuss with your teacher.

a. a pencil

g

b. an elephant

kg

c. a horse

kg

d. a bunch of grapes

g

e. rice for a family
for 1 month

kg

f. a basket of apples

g

g. a packet of
biscuits

g

h. a man

kg

i. a desk

kg

j. a butterfly

g

3. Now make your own lists:

We use kg to weigh these.

We use g to weigh these.

REMEMBER



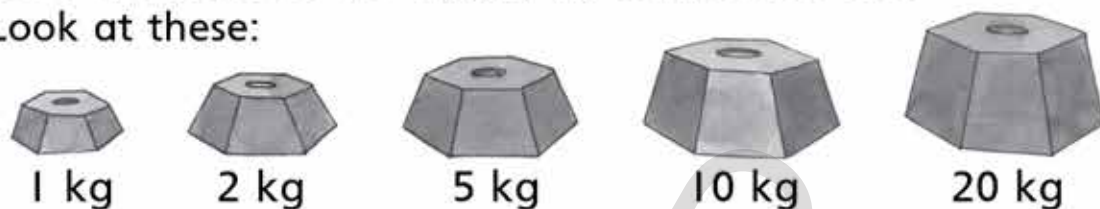
1 kg = 1000 g; 1000 g = 1 kg

Higher order thinking skills

- | | |
|------------------------|----------------------------------|
| a. How many g in 2 kg? | $2 \times 1000 = 2000 \text{ g}$ |
| b. How many g in 8 kg? | $8 \times 1000 = 8000 \text{ g}$ |
| c. How many g in 5 kg? | $5 \times 1000 = 5000 \text{ g}$ |
| d. How many g in 9 kg? | $9 \times 1000 = 9000 \text{ g}$ |

Mass: more about kilograms (kg)

The 1 kg weight is used frequently.
For heavier things, bigger weights are needed.
Here are some of the bigger kg weights we use.
Look at these:



4. To make 100 kg, how many of each weight do we need?

2 kg	5 kg	10 kg	20 kg
50 of these	20 of these	10 of these	5 of these
$50 \times 2 \text{ kg}$ $= 100 \text{ kg}$	$20 \times 5 \text{ kg}$ $= 100 \text{ kg}$	$10 \times 10 \text{ kg}$ $= 100 \text{ kg}$	$5 \times 20 \text{ kg}$ $= 100 \text{ kg}$

5. Complete these, then learn!

a. $20 \times 5 = 100$
 $5 \times 20 = 100$

$100 \div 20 = 5$
 $100 \div 5 = 20$

b. $10 \times 10 = 100$

$100 \div 10 = 10$

c. $50 \times 2 = 100$

$100 \div 50 = 2$
 $100 \div 2 = 50$

Mass: more about grams (g)

1 g is a small, light weight; we do not often use it all by itself.

Several grams are used together to form bigger weights.

Here are some of the bigger g weights we use:



500 g



200 g



100 g




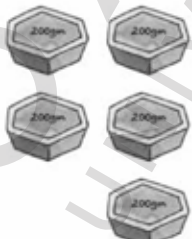
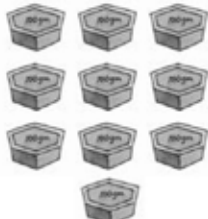

50 g



10 g

Weights of 10 g are used to weigh precious metals such as gold and silver.

6. To make 1 kg (1000 g) how many do we need?

500 g	200 g	100 g	50 g
2 of these	5 of these	10 of these	20 of these
			
$2 \times 500 \text{ g}$ $= 1000 \text{ g}$	$5 \times 200 \text{ g}$ $= 1000 \text{ g}$	$10 \times 100 \text{ g}$ $= 1000 \text{ g}$	$20 \times 50 \text{ g}$ $= 1000 \text{ g}$

Real-life story sums: mass addition

It is easy to add kg and g. Add the following:

	Rice	Nuts
Sold on Monday:	1 1 kg	5 0 0 g
Sold on Tuesday:	1 4 kg	1 2 0 g
Sold on Wednesday:	+ 2 6 kg	+ 2 6 0 g
Total for 3 days:	5 1 kg	8 8 0 g



1. Now add to solve these.

- a. Tanveer buys 500 g of peanuts, 100 g of coffee, and 50 g of cashew nuts. What is the total mass?

$$\begin{array}{r} 500\text{ g} \\ 100\text{ g} \\ + 50\text{ g} \\ \hline 650\text{ g} \end{array}$$

- b. A kitten weighs 490 g. Another kitten weighs 385 g. What is their mass taken together?

$$\begin{array}{r} 490\text{ g} \\ + 385\text{ g} \\ \hline 875\text{ g} \end{array}$$

- c. Rehan buys 250 g of biscuits on Saturday and 400 g on Sunday. What is the total mass of biscuits he buys?

$$\begin{array}{r} 400\text{ g} \\ + 250\text{ g} \\ \hline 650\text{ g} \end{array}$$

- d. A shopkeeper sells 49 kg of apples in one week and 58 kg in the next. How many kg does he sell altogether?

$$\begin{array}{r} 49\text{ kg} \\ + 58\text{ kg} \\ \hline 107\text{ kg} \end{array}$$

- e. Ali weighs 26 kg. Sabir weighs 4 kg less than Ali. How much do the two children weigh together?

$$\begin{array}{r} 26\text{ kg} \\ - 4\text{ kg} \\ \hline 22\text{ kg} \\ + 26\text{ kg} \\ \hline 48\text{ kg} \end{array}$$

- f. Rohail sells 300 g of cashew nuts. Gauhar sells 150 g more than Rohail. What is the total mass sold?

$$\begin{array}{r} 300\text{ g} \\ + 150\text{ g} \\ \hline 450\text{ g} \end{array}$$

Real-life story sums: mass subtraction

It is easy to subtract kg and g. Work these out:

Grocery Store		
Had last week:	7 18 kg	8 100 kg
Sold since then:	- 29 kg	- 350 kg
Has in stock now	59 kg	550 kg

2. Now subtract to solve these.

- a. A bar of chocolate weighs 100 g.
Daud eats 40 g. How much is left?

$$\begin{array}{r} 100 \text{ g} \\ - 40 \text{ g} \\ \hline 60 \text{ g} \end{array}$$

- b. A phone made by brand X weighs 250 g and a phone made by brand Y weighs 195 g. Which weighs more and by how much?
phone X weighs more by 55 g

$$\begin{array}{r} \overset{14}{b.} \quad 250 \text{ g} \\ \underline{195 \text{ g}} \\ 55 \text{ g} \end{array}$$

- c. In May, Sameer weighed 52 kg. In June, his mass had reduced to 48 kg. How much mass did he lose?

$$\begin{array}{r} \overset{14}{c.} \quad 52 \text{ kg} \\ \underline{48 \text{ kg}} \\ 4 \text{ kg} \end{array}$$

- d. Rumana's bag weighs 962 g. Amjad's bag weighs 704 g. How much heavier is Rumana's bag?

$$\begin{array}{r} \overset{14}{d.} \quad 962 \text{ g} \\ \underline{704 \text{ g}} \\ 258 \text{ g} \end{array}$$

- e. Kabir has a steel pan weighing 350 g and a steel plate weighing 290 g. Which is heavier and by how much?
Kabir's pan is heavier by 60 g

$$\begin{array}{r} \overset{14}{e.} \quad 350 \text{ g} \\ \underline{290 \text{ g}} \\ 60 \text{ g} \end{array}$$

- f. Saleem sells 148 kg of dal in June and 129 kg in July. How much more does he sell in June than in July?

$$\begin{array}{r} \overset{3}{f.} \quad 148 \text{ kg} \\ \underline{129 \text{ kg}} \\ 19 \text{ kg} \end{array}$$

Mass: more additions and subtractions

Look at these:

Examples:

$$\begin{array}{r} 22 \text{ kg} \\ + 20 \text{ kg} \\ \hline \end{array}$$

$$42 \text{ kg}$$

$$\begin{array}{r} 450 \text{ g} \\ + 325 \text{ g} \\ \hline \end{array}$$

$$775 \text{ g}$$

$$\begin{array}{r} 76 \text{ kg} \\ - 51 \text{ kg} \\ \hline \end{array}$$

$$25 \text{ kg}$$

$$\begin{array}{r} 811 \\ 920 \text{ g} \\ - 782 \text{ g} \\ \hline \end{array}$$

$$138 \text{ g}$$

3. Now, complete these.

$$\begin{array}{r} \text{a. } 22 \text{ kg} \\ + 68 \text{ kg} \\ \hline \end{array}$$

$$90 \text{ kg}$$

$$\begin{array}{r} \text{b. } 25 \text{ g} \\ + 50 \text{ g} \\ \hline \end{array}$$

$$75 \text{ g}$$

$$\begin{array}{r} \text{c. } 49 \text{ kg} \\ + 37 \text{ kg} \\ \hline \end{array}$$

$$86 \text{ kg}$$

$$\begin{array}{r} \text{d. } 96 \text{ g} \\ + 58 \text{ g} \\ \hline \end{array}$$

$$154 \text{ g}$$

$$\begin{array}{r} \text{e. } 95 \text{ kg} \\ - 79 \text{ kg} \\ \hline \end{array}$$

$$16 \text{ kg}$$

$$\begin{array}{r} \text{f. } 87 \text{ g} \\ - 45 \text{ g} \\ \hline \end{array}$$

$$42 \text{ g}$$

$$\begin{array}{r} \text{g. } 76 \text{ kg} \\ - 15 \text{ kg} \\ \hline \end{array}$$

$$61 \text{ kg}$$

$$\begin{array}{r} \text{h. } 48 \text{ g} \\ - 28 \text{ g} \\ \hline \end{array}$$

$$20 \text{ g}$$

$$\begin{array}{r} \text{i. } 730 \text{ kg} \\ - 150 \text{ kg} \\ \hline \end{array}$$

$$580 \text{ kg}$$

$$\begin{array}{r} \text{j. } 645 \text{ g} \\ + 222 \text{ g} \\ \hline \end{array}$$

$$867 \text{ g}$$

$$\begin{array}{r} \text{k. } 624 \text{ kg} \\ + 129 \text{ kg} \\ \hline \end{array}$$

$$753 \text{ kg}$$

$$\begin{array}{r} \text{l. } 539 \text{ g} \\ - 442 \text{ g} \\ \hline \end{array}$$

$$97 \text{ g}$$



CHALLENGE

$$\begin{array}{r} \text{m. } 342 \text{ kg } 120 \text{ g} \\ - 108 \text{ kg } 108 \text{ g} \\ \hline \end{array}$$

$$234 \text{ kg } 12 \text{ g}$$

$$\begin{array}{r} \text{n. } 629 \text{ kg } 220 \text{ g} \\ + 184 \text{ kg } 570 \text{ g} \\ \hline \end{array}$$

$$813 \text{ kg } 790 \text{ g}$$

$$\begin{array}{r} \text{o. } 119 \text{ kg } 845 \text{ g} \\ + 681 \text{ kg } 102 \text{ g} \\ \hline \end{array}$$

$$800 \text{ kg } 947 \text{ g}$$

Capacity: remembering litres (l)

Remember litres? Litres measure capacity.

Look at these containers:



Milkmen use this mug to measure milk.



Containers like this may be used for kerosene or petrol.



Look for this bottle in the shops.

You may buy your milk in a packet like this.



You enjoy drinking from this!



Think of a bottle of ink:

It is much smaller than the 1l containers.



Its capacity is less than 1 l.

How is the capacity of the ink bottle measured?

A much smaller measure called a **millilitre (ml)** is used for measuring small quantities of liquids. When we put 'milli' in front of a measure, it means that we are dividing that measure into 1000 parts.

REMEMBER



$1 \text{ litre} \div 1000 = 1 \text{ millilitre}$
 $1000 \times 1 \text{ millilitre} = 1 \text{ litre}$

Capacity: l and ml

Because 1 ml is much, much smaller than 1 l, we use ml to measure small amounts of liquids:

Use l to measure

- big amounts (quantities) of milk, water
- cooking oil in cans or bottles
- petrol for cars and motorcycles, etc.

Use ml to measure

- small amounts of liquid (for example, in a spoon, cup, or glass tumbler)
- syrups, tonics
- honey

1. Would you use l or ml to measure these quantities?

a. The ink in your pen	ml	b. Cough syrup	ml
c. The water in a fish tank	l	d. A small pack of mango drink	ml
e. The milk collected by a milkman	ml	f. A spoonful of medicine	ml
g. Milk in a cup	ml	h. A large bottle of cooking oil	l
i. Petrol for a scooter	l	j. A small bottle of shampoo	ml

REMEMBER

1 l = 1000 ml; 1000 ml = 1 l

Higher order thinking skills

- | | |
|------------------------|---|
| a. How many ml in 3 l? | $1000 \times 3 \text{ l} = 3000 \text{ ml}$ |
| b. How many ml in 6 l? | $1000 \times 6 \text{ l} = 6000 \text{ ml}$ |
| c. How many ml in 4 l? | $1000 \times 4 \text{ l} = 4000 \text{ ml}$ |

Capacity: more about litres (l)

Litres are used to measure quite big quantities of liquid.
For larger quantities, containers of greater capacity are used.



10 l



5 l



2 l



1 l

Aslam wants to empty a 100-litre tank of oil.
If he uses his 1-l container, how many times must he fill it?

$$\begin{array}{r} 100 \\ 1 \overline{)100} \\ \underline{100} \\ 00 \end{array}$$

Answer: 100 times

If he uses his 2-l container, how many times must he fill it?

$$2 \overline{)100}$$

Answer: 50 times

If he uses his 5-l container, how many times must he fill it?

$$5 \overline{)100}$$

Answer: 20 times

If he uses his 10-l container, how many times must he fill it?

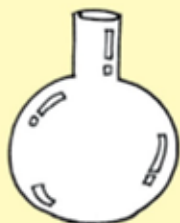
$$10 \overline{)100}$$

Answer: 10 times

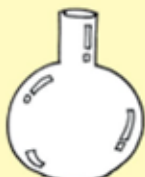
Capacity: more about millilitres (ml)

1 ml is a tiny measure, and is not often used all by itself. Many ml can be measured together, using containers like these:

You will use containers like these when you study science.



500 ml



250 ml



200 ml



100 ml



50 ml

How many will fill a 1-litre container?

2. Now fill in the blanks.

a. $500 \text{ ml} \times 2 = 1000 \text{ ml}$

b. $200 \text{ ml} \times 5 = 1000 \text{ ml}$

c. $100 \text{ ml} \times 10 = 1000 \text{ ml}$

d. $50 \text{ ml} \times 20 = 1 \text{ l}$



REMEMBER

1 litre =
1000 millilitres

3. Complete these division facts.

a. $1000 \div 500 = 2$
 $1000 \div 2 = 500$

b. $1000 \div 50 = 20$
 $1000 \div 20 = 50$

c. $1000 \div 100 = 10$
 $1000 \div 10 = 100$

d. $1000 \div 250 = 4$
 $1000 \div 4 = 250$

Capacity: addition

1. Add these.

a.

$$\begin{array}{r} 25 \text{ l} \\ + 49 \text{ l} \end{array}$$

74 l

b.

$$\begin{array}{r} 84 \text{ l} \\ + 19 \text{ l} \end{array}$$

103 l

c.

$$\begin{array}{r} 108 \text{ l} \\ + 57 \text{ l} \end{array}$$

165 l

d.

$$\begin{array}{r} 47 \text{ l} \\ + 48 \text{ l} \end{array}$$

95 l

e.

$$\begin{array}{r} 105 \text{ ml} \\ + 255 \text{ ml} \end{array}$$

360 ml

f.

$$\begin{array}{r} 280 \text{ ml} \\ + 324 \text{ ml} \end{array}$$

604 ml

g.

$$\begin{array}{r} 490 \text{ ml} \\ + 120 \text{ ml} \end{array}$$

610 ml

h.

$$\begin{array}{r} 650 \text{ ml} \\ + 350 \text{ ml} \end{array}$$

1000 ml

2. Use addition to solve these real-life story sums.

- a. Mr Khan's car used 7 l of petrol one day and 11 l the next. How much petrol was used for the 2 days?

$$\begin{array}{r} 7 \text{ l} \\ + 11 \text{ l} \\ \hline 18 \text{ l} \end{array}$$

- b. At a wedding, the guests drank 215 l of apple juice and 650 l of lime juice. How much juice did they drink altogether?

$$\begin{array}{r} 215 \text{ l} \\ + 650 \text{ l} \\ \hline 865 \text{ l} \end{array}$$

- c. A restaurant uses 35 l of ghee and 28 l of cooking oil every month. How much oil and ghee do they use altogether?

$$\begin{array}{r} 35 \text{ l} \\ + 28 \text{ l} \\ \hline 63 \text{ l} \end{array}$$

- d. 350 ml; 100 ml; 650 ml; 425 ml.

- Add the largest and the smallest amounts.
- Add the 2 middle numbers.

$$\begin{array}{r} 650 \\ + 100 \\ \hline 750 \end{array} \quad \begin{array}{r} 425 \\ + 350 \\ \hline 775 \end{array}$$

Capacity: subtraction

3. Subtract.

a.

$$\begin{array}{r} 76 \text{ l} \\ - 55 \text{ l} \\ \hline 21 \text{ l} \end{array}$$

b.

$$\begin{array}{r} 784 \text{ l} \\ - 19 \text{ l} \\ \hline 65 \text{ l} \end{array}$$

c.

$$\begin{array}{r} 128 \text{ l} \\ - 66 \text{ l} \\ \hline 62 \text{ l} \end{array}$$

d.

$$\begin{array}{r} 543 \text{ l} \\ - 239 \text{ l} \\ \hline 304 \text{ l} \end{array}$$

e.

$$\begin{array}{r} 145 \text{ ml} \\ - 102 \text{ ml} \\ \hline 43 \text{ ml} \end{array}$$

f.

$$\begin{array}{r} 260 \text{ ml} \\ - 180 \text{ ml} \\ \hline 80 \text{ ml} \end{array}$$

g.

$$\begin{array}{r} 3150 \text{ ml} \\ - 275 \text{ ml} \\ \hline 75 \text{ ml} \end{array}$$

h.

$$\begin{array}{r} 4580 \text{ ml} \\ - 399 \text{ ml} \\ \hline 181 \text{ ml} \end{array}$$

4. Use subtraction to solve these real-life story sums.

- a. At the start of a journey, a car had 15 l of petrol in its tank. At the end, 6 l were left. How much petrol was used?

$$\begin{array}{r} 15 \text{ l} \\ - 6 \text{ l} \\ \hline 9 \text{ l} \end{array}$$

- b. Shamim bought a 450 ml bottle of shampoo. After 2 weeks, 180 ml was left. How much shampoo did she use?

$$\begin{array}{r} 450 \text{ ml} \\ - 180 \text{ ml} \\ \hline 270 \text{ ml} \end{array}$$

- c. A water tank contains 540 l of water. Father uses 18 l to clean his car. How much water remains in the tank?

$$\begin{array}{r} 540 \text{ l} \\ - 18 \text{ l} \\ \hline 522 \text{ l} \end{array}$$

- d. Parvez took 5 ml of medicine from a bottle containing 170 ml. How much medicine was left in the bottle?

$$\begin{array}{r} 170 \text{ ml} \\ - 5 \text{ ml} \\ \hline 165 \text{ ml} \end{array}$$

Capacity: more addition and subtraction

Look at these:

Examples:

$$\begin{array}{r} 48 \text{ l} \\ + 16 \text{ l} \\ \hline 64 \text{ l} \end{array}$$

$$\begin{array}{r} 380 \text{ ml} \\ + 240 \text{ ml} \\ \hline 620 \text{ ml} \end{array}$$

$$\begin{array}{r} 150 \text{ l} \\ - 102 \text{ l} \\ \hline 48 \text{ l} \end{array}$$

$$\begin{array}{r} 850 \text{ ml} \\ - 660 \text{ ml} \\ \hline 190 \text{ ml} \end{array}$$

5. Now complete these. Look for + or -.

$$\begin{array}{r} \text{a. } 24 \text{ l} \\ + 42 \text{ l} \\ \hline 66 \text{ l} \end{array}$$

$$\begin{array}{r} \text{b. } 65 \text{ ml} \\ + 37 \text{ ml} \\ \hline 102 \text{ ml} \end{array}$$

$$\begin{array}{r} \text{c. } 36 \text{ l} \\ + 72 \text{ l} \\ \hline 108 \text{ l} \end{array}$$

$$\begin{array}{r} \text{d. } 87 \text{ ml} \\ + 13 \text{ ml} \\ \hline 100 \text{ ml} \end{array}$$

$$\begin{array}{r} \text{e. } 92 \text{ l} \\ - 74 \text{ l} \\ \hline 18 \text{ l} \end{array}$$

$$\begin{array}{r} \text{f. } 47 \text{ ml} \\ - 29 \text{ ml} \\ \hline 18 \text{ ml} \end{array}$$

$$\begin{array}{r} \text{g. } 83 \text{ l} \\ - 57 \text{ l} \\ \hline 26 \text{ l} \end{array}$$

$$\begin{array}{r} \text{h. } 48 \text{ ml} \\ - 28 \text{ ml} \\ \hline 20 \text{ ml} \end{array}$$

$$\begin{array}{r} \text{i. } 620 \text{ ml} \\ - 280 \text{ ml} \\ \hline 340 \text{ ml} \end{array}$$

$$\begin{array}{r} \text{j. } 590 \text{ l} \\ - 120 \text{ l} \\ \hline 470 \text{ l} \end{array}$$

$$\begin{array}{r} \text{k. } 802 \text{ ml} \\ + 118 \text{ ml} \\ \hline 920 \text{ ml} \end{array}$$

$$\begin{array}{r} \text{l. } 540 \text{ l} \\ - 332 \text{ l} \\ \hline 208 \text{ l} \end{array}$$



CHALLENGE

$$\begin{array}{r} \text{m. } 485 \text{ l} \quad 110 \text{ ml} \\ - 379 \text{ l} \quad 80 \text{ ml} \\ \hline 106 \text{ l} \quad 30 \text{ ml} \end{array}$$

$$\begin{array}{r} \text{n. } 197 \text{ l} \quad 450 \text{ ml} \\ - 87 \text{ l} \quad 45 \text{ ml} \\ \hline 110 \text{ l} \quad 405 \text{ ml} \end{array}$$

$$\begin{array}{r} \text{o. } 209 \text{ l} \quad 215 \text{ ml} \\ + 319 \text{ l} \quad 465 \text{ ml} \\ \hline 528 \text{ l} \quad 670 \text{ ml} \end{array}$$



Time

Telling the time: hours and clocks

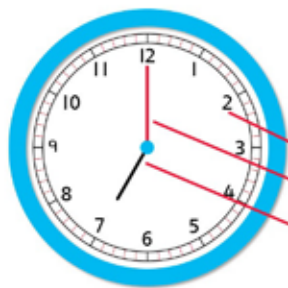
Long periods of time can be measured using weeks, months, and years. What about time periods less than a day?

Each day is divided into 24 equal parts called hours.



Each day is divided into two equal parts: The first half begins at midnight and ends at noon (12 hours). The second half begins at noon and ends at midnight (12 hours).

A clock tells us the time of the day.



Look at:
 The hours marked from 1 to 12
 The long hand
 The short hand

Is there a clock in your classroom?
 Look at it. See the hours marked from 1 to 12. See the long hand and the short hand.

1. Write the correct numbers in the boxes.



Clocks: minute hand and hour hand

Look closely at the clock in your classroom.

Watch the long hand.

See how it moves.

Wait and watch carefully.

Count the small markings along the edge.



The long hand is the minute hand. It makes a complete turn round the clock face every hour.
12 to 1, 1 to 2, 2 to 3, and back to 12 is a complete turn.
It measures small units of time called minutes.
There are 60 minutes in every hour.



Now watch the short hand.

Can you see it moving?

It is moving, but very, very slowly...

The short hand is the hour hand. It makes a complete turn round the clock face once every twelve hours.
It measures hours.

Because there are 24 hours in each day, the hour hand makes two complete turns every day:

$$12 \times 2 = 24; 24 \div 12 = 2$$

12 midnight to 12 noon: 1 complete turn

12 noon to 12 midnight: 1 complete turn

Telling the time

Look at this clock.

The hour hand is pointing to 3.
The minute hand is pointing to 12.

When the long hand points to 12,
an hour is ending and a new hour is starting.
At this position, the time is 3 o'clock.



1. What time does each clock show? Write in the blanks.

a.



3 o'clock



b.



1 o'clock



c.



7 o'clock



d.



5 o'clock



e.



4 o'clock



f.



8 o'clock



Telling the time

2. Draw hands on the clock to show the time given.

a.



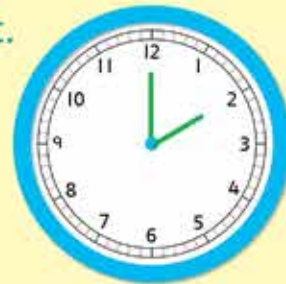
4 o'clock

b.



9 o'clock

c.



2 o'clock

d.



11 o'clock

e.



5 o'clock

f.



3 o'clock

g.



10 o'clock

h.



6 o'clock

i.



1 o'clock

j.



12 o'clock

k.



8 o'clock

l.



7 o'clock

Telling the time: earlier and later

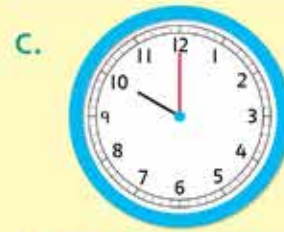
3. Look at the clocks, then write the time that is one hour earlier than the time shown.



4 o'clock



12 o'clock



9 o'clock



6 o'clock



8 o'clock



3 o'clock

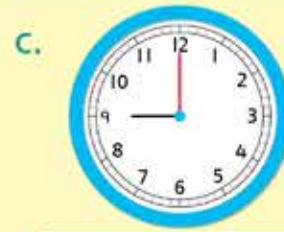
4. Now write the time that is one hour later than the time shown.



7 o'clock



4 o'clock



10 o'clock



12 o'clock



2 o'clock



6 o'clock

5. Yesterday morning

What were you doing yesterday morning at:

a.



6 o'clock

sleeping

b.



7 o'clock

c.



8 o'clock

d.



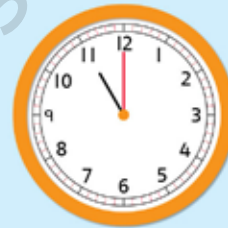
9 o'clock

e.



10 o'clock

f.



11 o'clock

6. Tomorrow afternoon and evening

What will you probably be doing tomorrow afternoon or evening at:

a.



2 o'clock

studying

b.



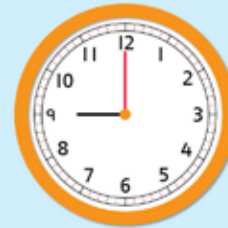
5 o'clock

c.



6 o'clock

d.



9 o'clock

Half past the hour

Look at this clock.

The minute hand is no longer pointing to 12.
It has moved halfway round the clock to 6.
It has moved 30 spaces.

The hour hand has also moved.

It is now halfway between 3 and 4.

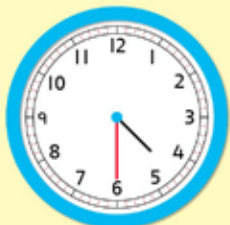
The time on this clock is 'half past 3'.

'Half past 3' is short for half an hour past 3 o'clock.



7. What time does each clock show?

a.



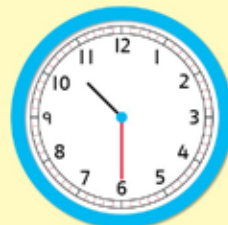
half past 4

b.



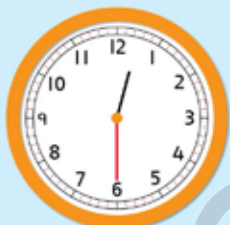
half past 7

c.



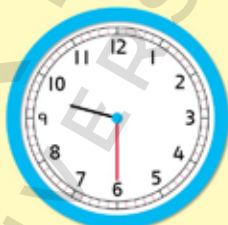
half past 10

d.



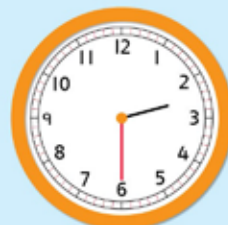
half past 12

e.



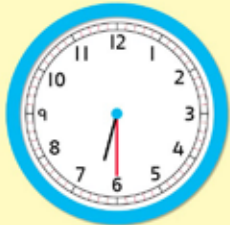
half past 9

f.



half past 2

g.



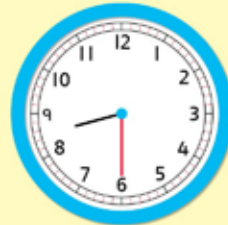
half past 6

h.



half past 11

i.



half past 8



Telling the time

8. Look at the clock face and record the time.



8 o'clock



half past 1



half past 12



6 o'clock



half past 3



half past 7



7 o'clock



3 o'clock



half past 1



9 o'clock



half past 4



5 o'clock

Time: hours and minutes



The numbers marked on a clock face represent 12 hours.

We can see smaller units marked between the numbers. If we count carefully, we find 4 adjacent units between each of the two numbers.

Between 12 and 1, there are 4 units.

The fifth unit is marked as 1. When the minute hand reaches 1, five minutes have passed.



Between 1 and 2, there are 4 units. The fifth unit is marked as 2.

When the minute hand goes from 1 to 2, five minutes have passed.



Starting at 12, count how many small units there are altogether on the clock face.

If you counted 60 units, your answer is correct.

These small units are the 60 minutes that make up 1 hour.

The minute hand goes from one mark to the next in 1 minute.



1. Look at the clock face at the top of the page. How many minutes will have passed when the minute hand moves from

- a. 12 to 1 **5 min** b. 12 to 5 **25 min** c. 12 to 9 **45 min**
d. 12 to 4 **20 min** e. 12 to 8 **40 min** f. 12 to 12 **65 min**

2. Think carefully, then fill in the blanks.

- a. The minute hand takes **15** minutes to move from 12 to 3.
b. The hour hand takes **3** hours to move from 12 to 3.
c. The hour hand takes **3** hours to move from 2 to 5.
d. The minute hand takes **15** minutes to move from 2 to 5.



5-minute intervals

1. Look at the clocks carefully and write the time in hours and minutes. One has been done for you.

a.



hr : mins
5 : 20

b.



hr : mins
4 : 10

c.



hr : mins
1 : 30

d.



hr : mins
7 : 25

e.



hr : mins
5 : 35

f.



hr : mins
4 : 45

g.



hr : mins
7 : 50

h.



hr : mins
9 : 15

i.



hr : mins
11 : 40

5-minute intervals

2. Draw the missing hands on these clocks and write the missing times in the boxes. The chain of clocks will show the time in 5-minute intervals.

The diagram shows a sequence of 15 analog clocks arranged in four rows, connected by arrows. Each clock has a time written in a box below it. The times are: 11:00, 11:05, 11:10, 11:15, 11:20, 11:25, 11:30, 11:35, 11:40, 11:45, 11:50, 11:55, and 12:00. The hands are drawn in green for the first and last clocks, and in red for the others.

Time: a.m. and p.m.

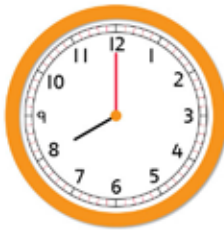
Each day is made up of 24 hours.

A day ends at 12 midnight and a new day begins at the same time: at 12 midnight.

For example, Wednesday ends at 12 midnight and Thursday begins at 12 midnight. It ends 24 hours later at 12 midnight. Then Friday begins!

The time between 12 midnight and 12 noon is called **a.m.** It means **in the morning**. You write 8 a.m. for 8 o'clock in the morning.

The time between 12 noon and 12 midnight is called **p.m.** The time covered by p.m. is between noon and midnight. We do not write 12 a.m. or 12 p.m. Instead of that, we use 12 noon or 12 midnight.



You write
8 a.m. for
8 o'clock
in the
morning.



You write
8 p.m. for
8 o'clock
at night.



You write
3 a.m. for
3 o'clock
in the
morning.



You write
3 p.m. for
3 o'clock
in the
afternoon.

Time: hours in a day

1. Colour the correct box to show the time.
One has been done for you.

a. 6 o'clock in the morning.

a.m.

p.m.

b. 8 o'clock in the night.

a.m.

~~p.m.~~

c. 2 o'clock in the afternoon.

a.m.

~~p.m.~~

d. 3 o'clock in the morning.

~~a.m.~~

p.m.

e. 1 o'clock in the afternoon.

a.m.

~~p.m.~~

f. 11 o'clock in the morning.

~~a.m.~~

p.m.

2. Use a.m. or p.m. to write the times.
One has been done for you.

a. 9 o'clock in the morning.

9 a.m.

b. 10 o'clock in the night.

10 pm

c. 4 o'clock in the afternoon.

4 pm

d. 12 o'clock.

12 pm

e. 7 o'clock in the evening.

7 pm

f. 1 o'clock in the night.

1 am

Solar calendar

Morning, midday, afternoon, and evening are some of the words used to measure time.

The days of the week also measure time.

There are 7 days in a week.

1. Fill in the names of the days in the blanks below:

1. M onday

5. F riday

2. Tu esday

6. Sa turday

3. W ednesday

7. Su nday

4. Th urday

What about longer periods of time?

- 'Months' and 'years' are used to measure longer periods of time.
- The calendar shows you the days, weeks, and months for a year.
- Each month has its own special name. You have already learnt the names of the months of a year.
- There are 52 weeks in a year.
- There are 365 days in a year.

2. Find your birthday on the calendar. Mark the date and the day of the week.
3. Make a list of months and dates of birthdays of all the students in your class.

The calendar

CALENDAR



JANUARY							FEBRUARY							MARCH						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5						1	2						1	2
6	7	8	9	10	11	12	3	4	5	6	7	8	9	3	4	5	6	7	8	9
13	14	15	16	17	18	19	10	11	12	13	14	15	16	10	11	12	13	14	15	16
20	21	22	23	24	25	26	17	18	19	20	21	22	23	17	18	19	20	21	22	23
27	28	29	30	31			24	25	26	27	28			24	25	26	27	28	29	30
														31						
APRIL							MAY							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
	1	2	3	4	5	6			1	2	3	4							1	
7	8	9	10	11	12	13	5	6	7	8	9	10	11	2	3	4	5	6	7	8
14	15	16	17	18	19	20	12	13	14	15	16	17	18	9	10	11	12	13	14	15
21	22	23	24	25	26	27	19	20	21	22	23	24	25	16	17	18	19	20	21	22
28	29	30					26	27	28	29	30	31		23	24	25	26	27	28	29
														30						
JULY							AUGUST							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
	1	2	3	4	5	6					1	2	3	1	2	3	4	5	6	7
7	8	9	10	11	12	13	4	5	6	7	8	9	10	8	9	10	11	12	13	14
14	15	16	17	18	19	20	11	12	13	14	15	16	17	15	16	17	18	19	20	21
21	22	23	24	25	26	27	18	19	20	21	22	23	24	22	23	24	25	26	27	28
28	29	30	31				25	26	27	28	29	30	31	29	30					
OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5						1	2	1	2	3	4	5	6	7
6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
27	28	29	30	31			24	25	26	27	28	29	30	29	30	31				



Calendar quiz

1. Complete the sentences below.

- The first month of the year is January.
- Next comes February.
- The month before May is April.
- The seventh month of the year is July.
- After July comes August.
- The last month of the year is December.
- There are 12 months in a year.
- There are 30 or 31 days in a month, except for February which has only 29 or 28 days.

2. Look at the calendar on the previous page. Then, do the quiz:

- How many months have 30 days? 4
What are their names? April, June, September,
and November
- How many months have 31 days? 7
What are their names? January, March, May,
July, August, October, and December
- Which month has a different number of days from all the other months? February
- How many weeks in a year? 52 weeks

Summer time—holiday flights

MAY

S	M	T	W	T	F	S
			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	

JUNE

S	M	T	W	T	F	S
						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						

1. All the Thursday flights in May are fully booked. Write the dates of these flights.

2, 9, 16, 23, and 30.

2. All the Saturday flights in June are still available. Write the dates of these flights.

1, 8, 15, 22, and 29

3. Complete the chart of flight bookings.

Month	Date	Day of the Week
May	3	Friday
June	8	Saturday
May	14	Tuesday
June	27	Monday

Use the calendar.

Maha's holidays start on 3rd May and end on 14th June.

Name the day her holidays begin and the day they end.

Start on 3rd May, Friday and end on 14th June, Friday.

Time: real-life story sums

1. Think carefully, then write sums to answer these.

- a. January has 31 days. February has 28 days.
How many days are there altogether
in the 2 months?

Answer: days

$$\begin{array}{r} 31 \\ + 28 \\ \hline 59 \end{array}$$

- b. How many days are there in 6 weeks?

Answer: days

- c. Maha is 6 years old. Her teacher is 29 years old.
How much older is Maha's teacher than her?

Answer: years

$$\begin{array}{r} 29 \\ - 6 \\ \hline 23 \end{array}$$

- d. There are 365 days in a year.
How many days are there in two years?

Answer: days

- e. A fortnight is 2 weeks or 14 days.
How many days are there in 5 fortnights?

Answer: days

- f. How many days are there in August, September, and
October taken together?

Answer: days

- g. How many weeks are there in 56 days?

Answer: weeks

Lunar calendar

Muslims all over the world also follow the Islamic calendar, known as the 'Lunar Calendar'.

Each month of the lunar calendar begins with the sighting of the Moon.

There are 29 or 30 days in the lunar months.

Lunar months

1. Muharram
2. Safar
3. Rabi-ul-Awwal
4. Rabi-ul-Sani
5. Jammadi-ul-Awwal
6. Jammadi-ul-Sani
7. Rajab
8. Sha'ban
9. Ramadan
10. Shawwal
11. Zul-Qadah
12. Zul-Hajjah

1. Write in the blanks.

- a. The first month of the Islamic calendar is Muharram.
- b. Eid-ul-Azha is celebrated in the month of Zul-Hajjah.
- c. Ramadan comes after Sha'ban.

Calendar of Ramadan 1442 AH

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		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				

2. Look at the calendar and fill in the blanks.

- a. What is the day on 5th of Ramadan? Sunday
- b. What is the date on 3rd Thursday of Ramadan? 16th
- c. What is the last day of Ramadan? wednesday
- d. What is the day on 15th of Ramadan? Wednesday

Review: time

1. Fill in the blanks:

- There are 24 hours in a day.
- The long hand on a clock is also called the minute hand.
- The month of June has 30 days.
- There are 12 months and 365 days in a year.
- February is the month which has only 28 days.
- There are 12 months in the lunar calendar.
- The month of Sha'ban is between Rajab and Ramadan.

2. Tick (✓) the correct answer:

- The short hand on a clock tells us (the minutes/the hour). ✓
- The long hand goes around the clock (once every hour/once every day). ✓
- If Monday comes first, the fifth day is (Saturday/Friday). ✓
- Which is the third month of Lunar calendar? (Rabi-ul-Awwal/Jammadi-ul-Awwal). ✓



Here's a useful rhyme for you to learn.

30 days hath September,
April, June, and November.
All the rest have 31,
Excepting February alone,
Which has 28 days clear,
And 29 in each leap year.

A leap year is a special year containing 366 days. It comes once every 4 years. 1996 was a leap year and so were 2000, 2004, and 2008.



9

Geometry

Do you remember?

1. Match the face with its name.

rectangle

circle

triangle

square

2. Join each shape to its name from the list.

cuboid

cylinder

cone

sphere

cube

Shapes: sides and vertices

I am a square.
I have four equal sides.
I have four vertices.



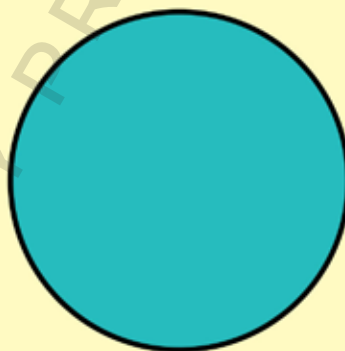
I am a rectangle.
I have two opposite sides equal.
I have four vertices.



I am a triangle.
I have three sides.
I have three vertices.



I am a circle.



I am a semi-circle.

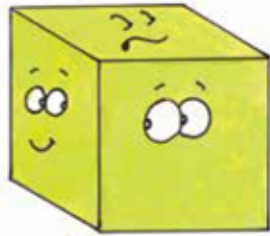


I am a quarter-circle



More about shapes

Remember these?



I'm Mr Cube.
My faces are
squares.

How many faces
do I have?

Find me in your classroom.
(I am a dice, a building block,
a cube-shaped box,...)

Count my faces and
write the number.



I'm Mr Cuboid.
My faces are
rectangles.

How many faces
do I have?

Find me, too, in your classroom.
(I could be a chalk box, a thick
book, a pencil box,...)

Count my faces and
write the number.



We both have
 faces each!

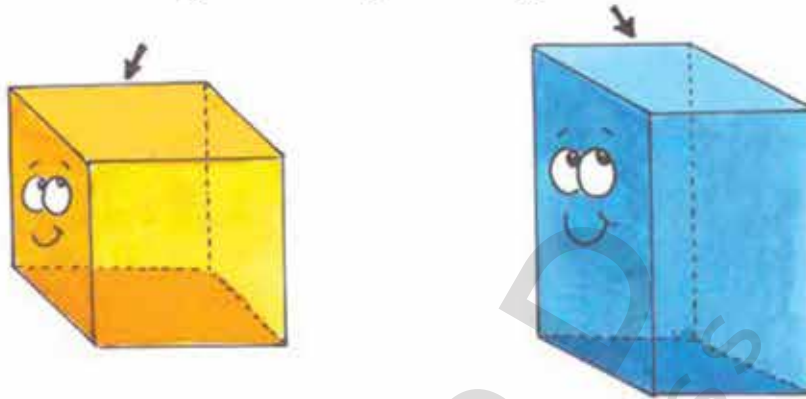
REMEMBER



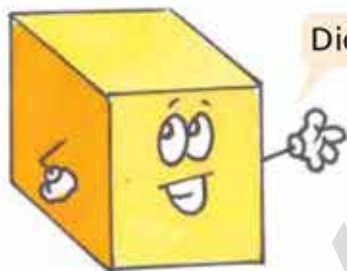
Cubes and cuboids have 6 faces each.
A cuboid is a stretched cube.

Shapes: edges

Mr Cube and Mr Cuboid say,
'You know about faces. We also have edges.
You can feel our edges with your fingers.'



How many edges can you count?
Do not count the same edge twice!

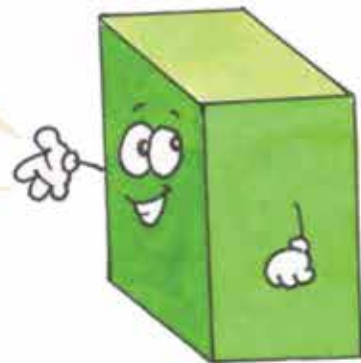


Did you count 12 edges on me?

Then you are correct!

Did you count 12 edges on me, too?

Then you are
correct again!



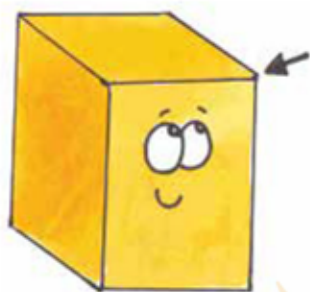
REMEMBER



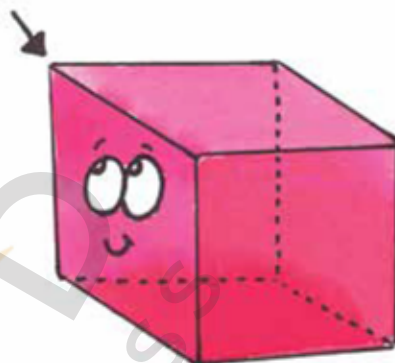
Cubes and cuboids have 6 faces each.
Cubes and cuboids have 12 edges each.

Shapes: vertex and vertices

Mr Cube and Mr Cuboid say,
'You know about our faces.
You know about our edges.
Now we shall tell you about our vertices.
Look at us carefully.'



Do you know, a refrigerator is a cuboid?



Can you see the pointed corners, where 3 of the faces meet? Feel it.

This is a vertex.

The plural of vertex is vertices (Say: ver-tee-ses)

How many vertices do we have?



I have 8 vertices.



So do I.

REMEMBER



Cubes and cuboids have 6 faces each. Cubes and cuboids have 12 edges each. Cubes and cuboids have 8 vertices each.

Shapes: spheres and their faces



I'm Mr Sphere.



I have a very special face.
It goes right round me.

Feel it
in your
hands.

Find me in the classroom.
(I am a ball, a marble, a globe,...)
Feel me carefully. How many faces do I have?

Yes, you are right.
I have only one face.

No, I
do not.

Do I have any edges?

No, I
do not.

Do I have any vertices?

It is a
curved
face!



I am
special!

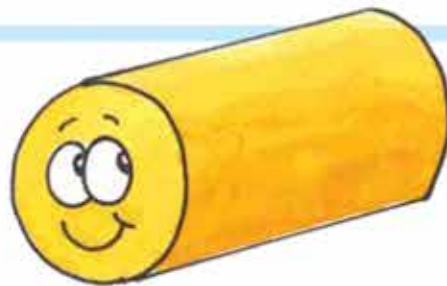
REMEMBER



A sphere has only 1 face (a curved face). A sphere has no edges and no vertices.

Shapes: all about cylinders

I'm Mr Cylinder.



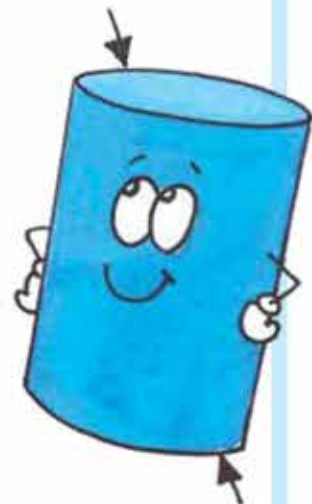
Look for me in your classroom.
I am a marker pen, an old can,
a piece of chalk,...

Look at me carefully.
Can you see my 3 faces?

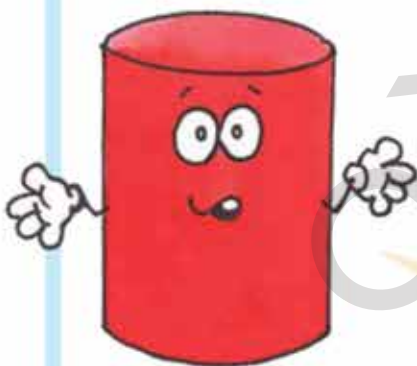


This face is a curved face.
Two of my faces are flat
circles.

Now count my edges.
I have 2 of them.



Do I have any vertices?
No, I do not.

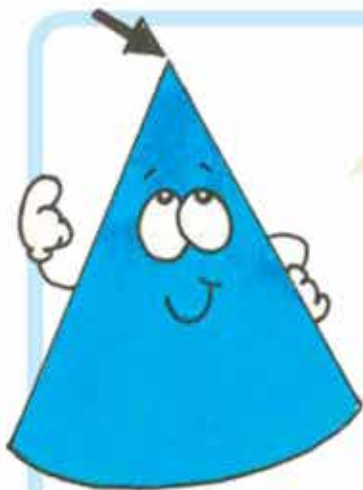


REMEMBER



A cylinder has 3 faces. A cylinder has 2 edges.
A cylinder has no vertices.

Shapes: all about cones



You meet me each time you eat a cone ice cream!
I'm Mr Cone.

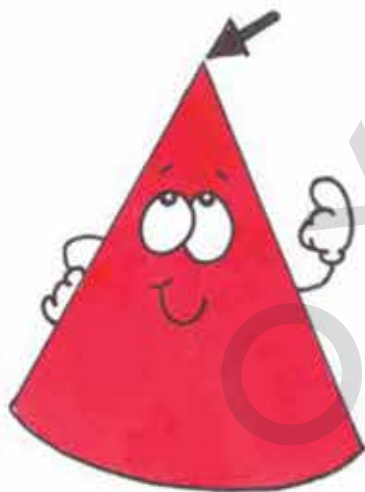
Try to find me in your classroom.
(I am a funnel, a carrot, ...)

Look at me and feel me.
How many faces do I have?

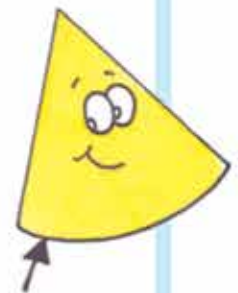


I'm curved.

I have only 2 faces.
One of them is curved.



Now count my edges.
Yes, I have only 1 edge.



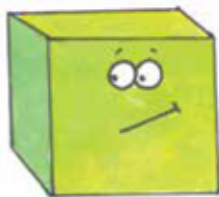
Do I have any vertices?
Yes, I have 1 vertex.

REMEMBER



A cone has 2 faces. A cone has 1 edge. A cone has 1 vertex.

Plane and curved faces



Slide me on the floor.



Remember our faces? Feel them carefully. They are flat.

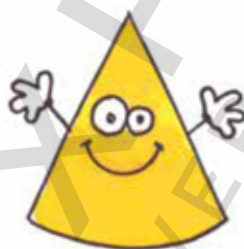
In math, we use a special word instead of 'flat'. The word is **plane**. Cubes and cuboids have plane faces only.



Remember my face? It goes round and round me! It is not flat. It is a curved face.

Roll me on the floor.

Spheres have one curved face only.



Look at us! Feel us carefully. We have plane faces and curved faces. Count and write how many.

Mr Cylinder has plane faces and curved face.

Mr Cone has plane faces and curved face.

Roll us and slide us on the floor. Notice how we roll!

REMEMBER



The flat faces of the cylinder and the cone are circles.

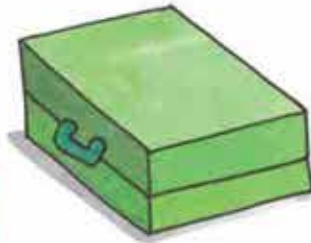
Solid shapes

1. Name the shapes given below.

Write **cube** or **cone** or **cylinder** or **cuboid**.



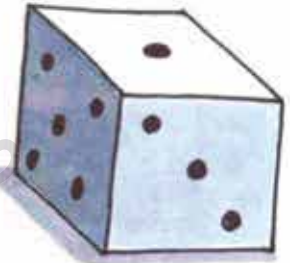
cone



cuboid



cylinder



cube

2. Match the statement with the correct shape.

a. I have twelve edges.

b. I have 0 edges and 0 vertices.

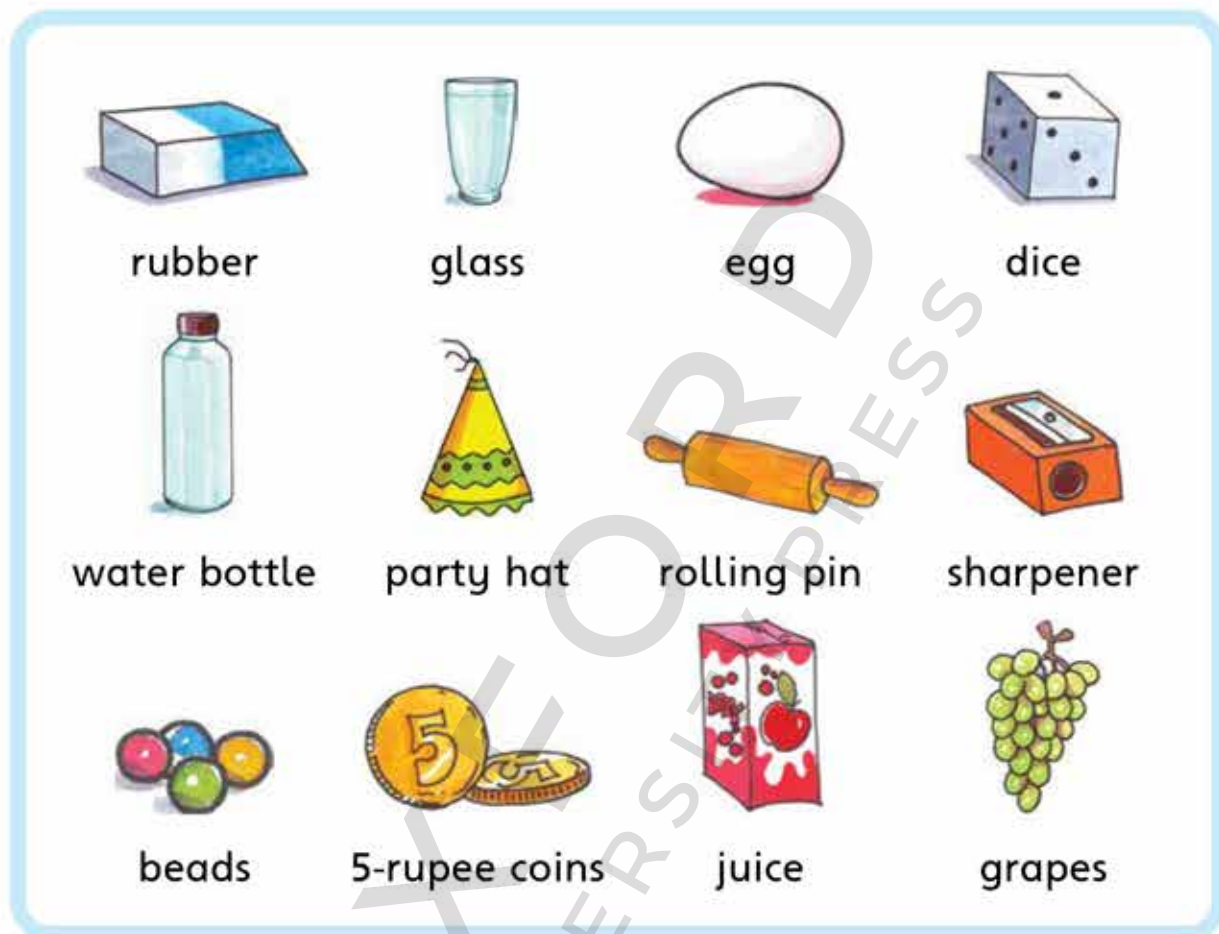
c. I have 3 faces: 2 are plane and 1 is curved.

d. I have only 1 vertex.



Plane and curved faces

Look carefully at these objects. They are things we see around us everyday. Do they have plane faces, curved faces, or both plane and curved faces?



1. Now put the objects in the correct column.

Flat faces only	Curved faces only	Both plane and curved faces
dice	grapes	coin
rubber	beads	party hat
juice	egg	glass
	rolling pin	water bottle

Straight and curved lines

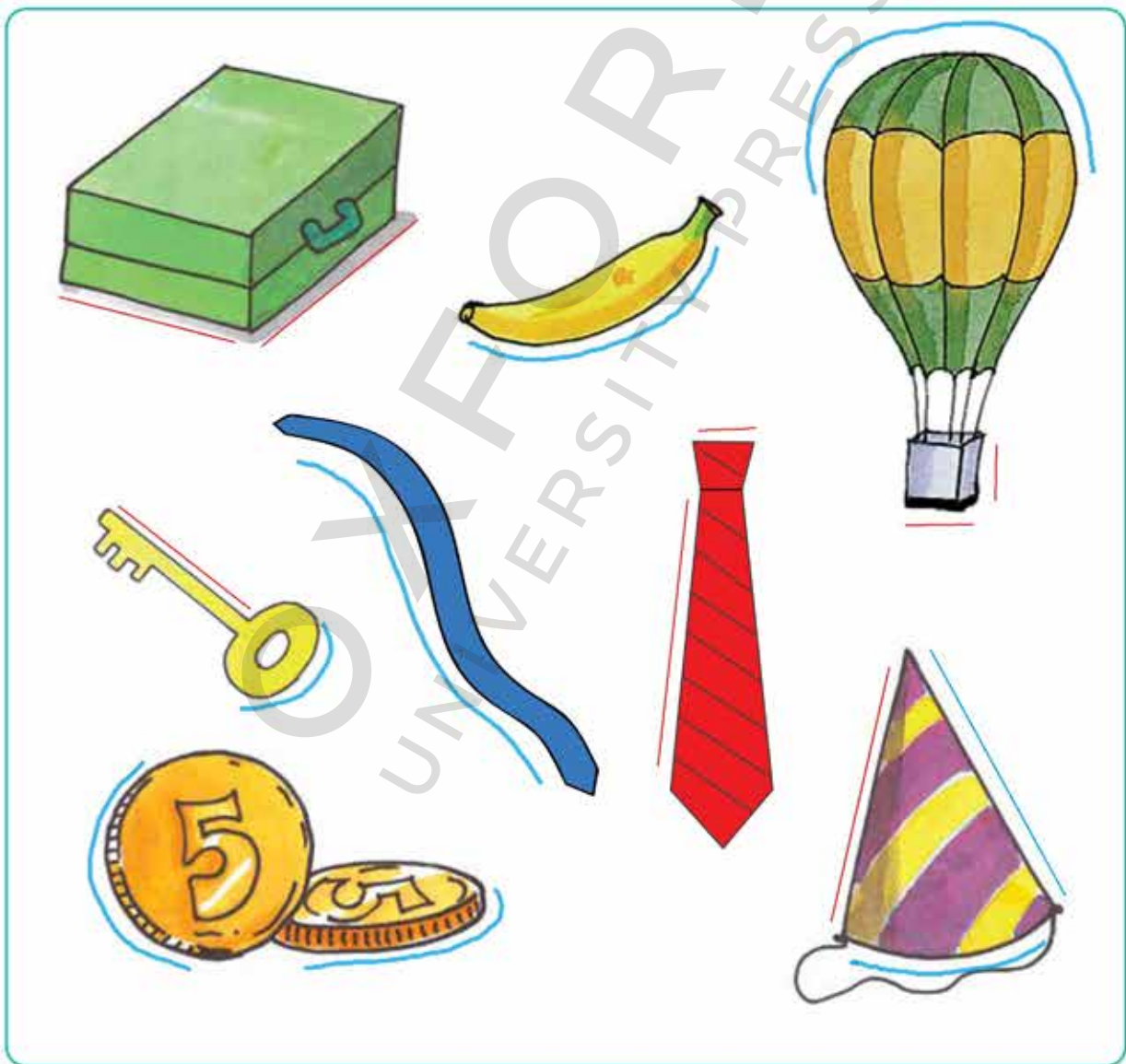
This is a straight line.



This is a curved line.



Mark the straight lines red and curved lines blue in the given shapes.



Straight and curved lines

1. Do you remember straight lines and curved lines?

a. Write all capital letters which have straight lines only.

A E F H I K L M N T V W X Y Z

b. Write all capital letters which have curved lines only.

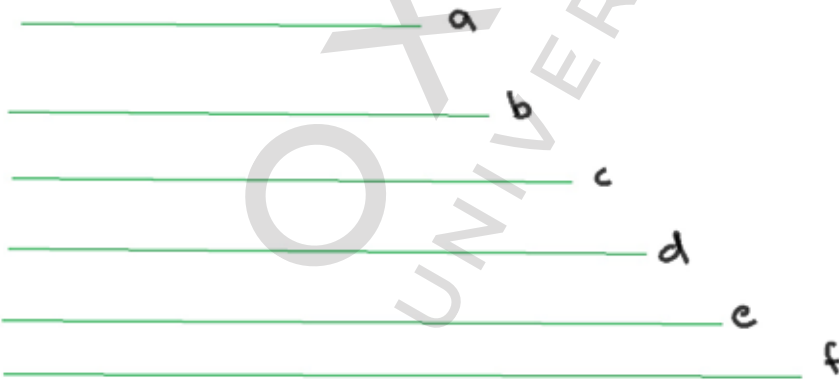
C G O Q S U

c. Write all capital letters which have both straight and curved lines.

B D P R J

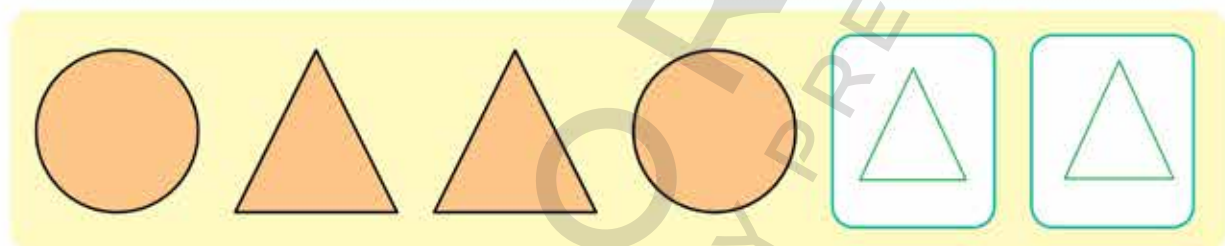
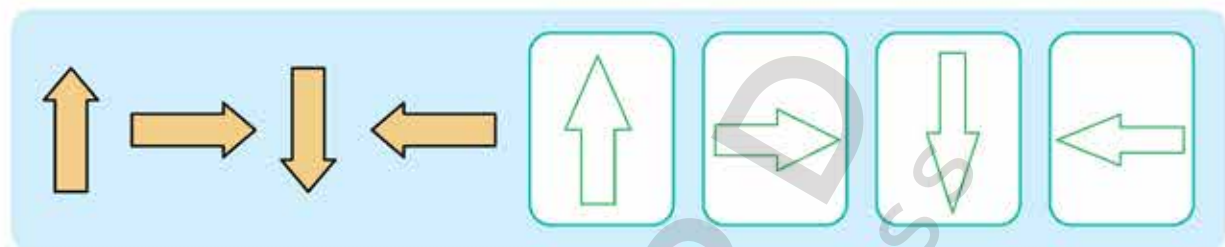
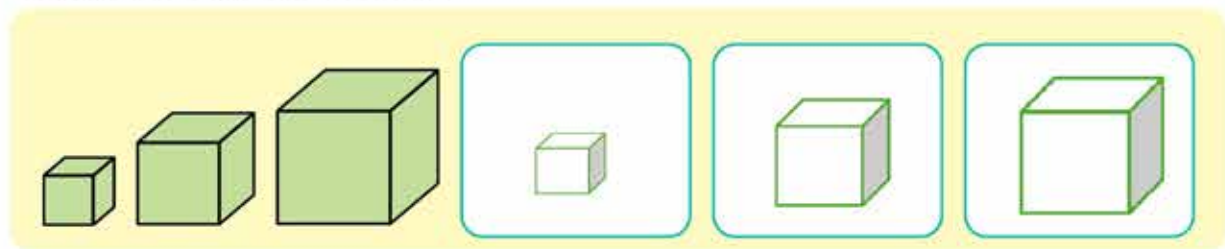
2. Use a straight edge ruler to draw straight lines of the given length.

a. 5 cm b. 6 cm c. 7 cm d. 8 cm e. 9 cm f. 10 cm



Pattern

Complete the pattern.



Choose the correct answer and circle it.

1. What is the value of 7 in the number 780?

- a. 7 b. 70 c. 700 d. 7000

2. $600 + 40 + 9 =$ _____

- a. 6409 b. 640 c. 649 d. 6040

3. What number is 100 more than 663?

- a. 863 b. 763 c. 963 d. 6630

4. 8 hundreds + 9 tens is

- a. 890 b. 89 c. 8090 d. 899

5. The sum of the greatest 3-digit number and the smallest 4-digit number is

- a. 1099 b. 999 c. 1999 d. 109

6. Which one of the following answers is an odd number?

- a. $16 + 4$ b. $21 + 3$ c. $29 + 4$ d. $36 + 2$

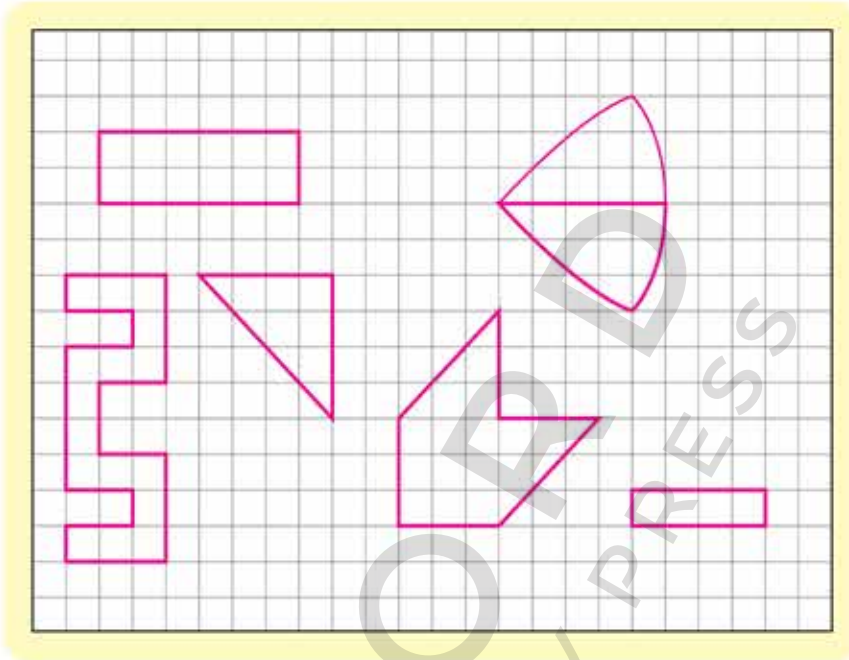
7. Add 65 to the product of 5 and 4.

- a. 95 b. 85 c. 850 d. 950

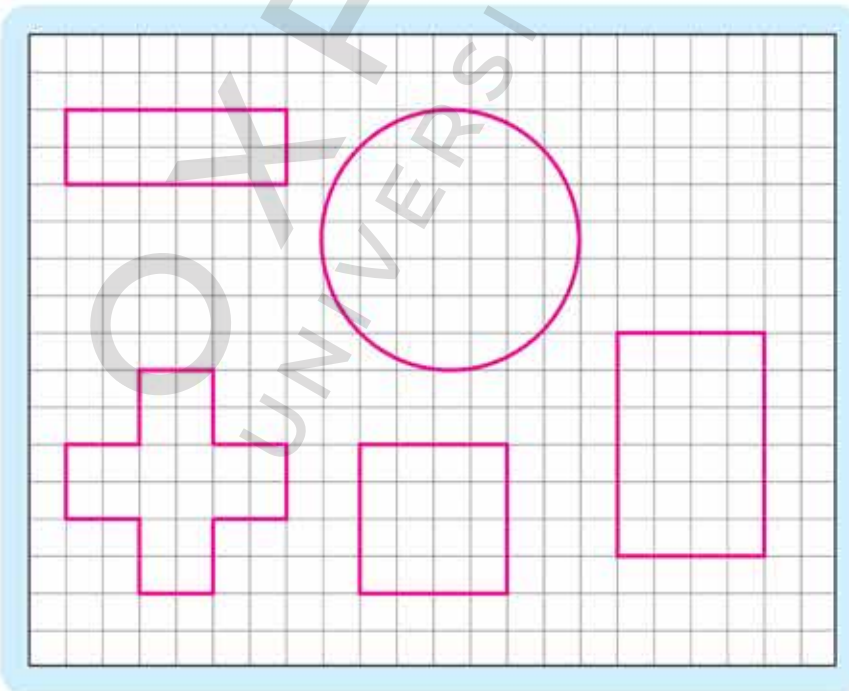
Practice makes you quicker.

1. If you have nine marbles and you lose three of them, how many do you have left?
2. In a class there are 18 girls and 23 boys. How many children are there in the class?
3. There are 3 dozen apples. If 6 are rotten, how many are good?
4. Laila sleeps for 8 hours each night. How many hours does she sleep for in a week?
5. If you have 5 apples and you eat them all, how many are left with you?
6. How many months in 3 years?
7. The double of a number is 24. What is the number?
8. Feroze collects model planes. He can fit 6 in each display case. How many can he put in 9 cases?

1. Colour half of each shape.



2. Colour quarter of each shape.



176

289

342

999

500

457

250

450

618

550

400

110

803

199

852

645

375

210

700

305

1. Look at the numbers on the grid and answer the questions below.

a. The largest even number _____

b. The smallest odd number _____

c. Write all the numbers that are less than 200 and greater than 195. _____

d. Which number is one less than one thousand?

e. Which two even numbers add up to 900?
_____ and _____

f. The sum of the first and the last number on the grid is _____.

1. $2 \times 3 =$ $\times 2 =$ 12 $\times 4 =$

2. $4 \times 1 =$ $\times 1 =$ $\times 3 =$

3. $3 \times 3 =$ $\times 4 =$ $\times 1 =$

4. $5 \times 1 =$ $\times 6 =$ $\times 1 =$

5. $2 \times 2 =$ $\times 2 =$ $\times 5 =$

Add all the numbers in the circles.

+ + + + =

Choose the correct answer and circle it.

1. What is the next number in the sequence? 11, 13, 15, ____
 a. 16 b. 17 c. 18 d. 20

2. A pizza is cut into 4 equal parts. One part is eaten.
 What fraction of the pizza is left?
 a. $\frac{2}{3}$ b. $\frac{3}{4}$ c. $\frac{1}{4}$ d. $\frac{2}{4}$

3. There are _____ days in 4 weeks.
 a. 21 days b. 23 days c. 28 days d. 35 days

4. A rope 2 m 50 cm long is cut into 2 equal parts. The
 length of each rope will be
 a. 1 m 5 cm b. 1 m 50 cm c. 1 m 25 cm d. 1 m

5. If Adil sleeps for 8 hours every day, he is awake for
 _____ hours.
 a. 12 hours b. 16 hours c. 10 hours d. 5 hours

6. What is the value of 5 in the number 605?
 a. 50 b. 500 c. 5 d. 5000

7. What number is 100 less than 159?
 a. 100 b. 5 c. 59 d. 109

8. How many vertices does a cube have?
 a. 6 b. 9 c. 8 d. 10

1. Complete these number patterns.

a. 

b. 

c. 

2. Draw a circle around each even number and cross each odd number.

64 29 54 42 108 71 101

3. Draw a red line to join any two numbers that add up to 96 and a green line to join any two numbers that add up to 100.





Real-life story sums

Read each problem carefully.

Decide which operation to follow—addition, subtraction, or multiplication. Do the working in the box.

- a. In a box there are 56 red marbles and 79 blue marbles. How many marbles in all?

- b. There are 750 students in Lake View School. If 375 are girls, how many are boys?

- c. Naima saved Rs 650 in June and Rs 225 in July. How much did she save in two months?

- d. In one basket there are 45 oranges. How many oranges in 5 baskets?

- e. In one class, there are 36 students. How many students are there in 9 classes?

- f. There were 975 passengers on a train. If 268 passengers got off, how many remained on the train?

A coded message

1. Look at this message. It is in number code.



81	694	29	576
$\times 5$	$- 173$	$+ 34$	$+ 224$
<input type="text" value="405"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text" value="C"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

120	573	92	25
$\times 4$	$- 52$	$- 29$	$\times 4$
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

502	909	600	222	50
$+ 398$	$- 706$	$- 592$	$+ 258$	$+ 50$
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>



2. Can you read the message? Do the sums. Then match the answers to the code below. Write the letter that matches each answer in the box to find the hidden code.

- | | | |
|--------------------------------------|--------------------------------------|--------------------------------------|
| 405 = <input type="text" value="C"/> | 800 = <input type="text" value="E"/> | 900 = <input type="text" value="P"/> |
| 480 = <input type="text" value="T"/> | 8 = <input type="text" value="R"/> | 521 = <input type="text" value="O"/> |
| 100 = <input type="text" value="Y"/> | 63 = <input type="text" value="M"/> | 203 = <input type="text" value="A"/> |

Fun time

Complete the sums and then colour the picture given.

WORKSHEET 10

Green for even numbers < 100

Red for odd numbers < 100

Purple for even numbers > 100 but < 200

Yellow for odd numbers > 100 but < 200

Which number is not coloured? Why?

$$\begin{array}{r} 23 \\ + 18 \\ \hline \end{array}$$

$$9 \times 6 = \square$$

$$\begin{array}{r} 15 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 179 \\ - 84 \\ \hline \end{array}$$

$$\begin{array}{r} 38 \\ + 38 \\ \hline \end{array}$$

$$200 - 50 = \square$$

$$\begin{array}{r} 15 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 200 \\ - 89 \\ \hline \end{array}$$

$$\begin{array}{r} 300 \\ - 169 \\ \hline \end{array}$$

$$\begin{array}{r} 28 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 750 \\ - 195 \\ \hline \end{array}$$

1. Add or subtract as required. Check the answers.

a.	H T O	b.	H T O	c.	H T O	d.	H T O
	8 4		9 6		7 3		6 5
+	7 9	-	5 5	+	4 9	-	2 8

e.	1 0 5	f.	3 5 1	g.	6 1 4	h.	4 2 3
+	2 4 4	+	2 2 8	+	1 9 8	-	1 1 8

i.	2 6 4	j.	5 2 2	k.	8 1 1	l.	3 8 9
+	2 7 8	+	3 8 6	-	6 8 4	+	2 9 8

m.	9 2 3	n.	3 3 6	o.	7 2 7	p.	6 0 9
-	7 8 6	+	1 9 7	+	2 4 5	-	1 9 1




2. What time does each clock show?



3. Complete these.

a.	H T O	b.	H T O	c.	H T O	d.	H T O
	2 2		3 1		1 0 4		7 5
	× 4		× 3		× 2		× 5
	<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>
e.	8 4	f.	5 9	g.	1 2 5	h.	1 3 1
	× 6		× 3		× 4		× 5
	<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>

4. How many does each shape have?

	How many faces?	How many edges?	How many vertices?
	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>

5. Complete these in your notebook.

a. $5 \overline{)25}$	b. $6 \overline{)36}$	c. $3 \overline{)27}$	d. $10 \overline{)100}$
e. $6 \overline{)54}$	f. $10 \overline{)70}$	g. $3 \overline{)30}$	h. $6 \overline{)42}$

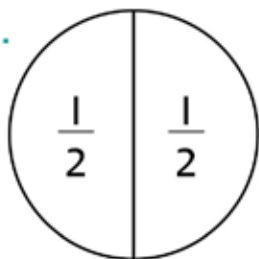
6. Solve these.

a. A ticket to the circus costs Rs 5. How many can Aleem buy with Rs 50?

b. Father has two notes in his wallet. Their value together is Rs 70. One note is a Rs 20 note. What is the other note?

7. Say the months rhyme, then fill in the blanks:
There are _____ days in September. March has _____ days. November, like September, has _____ days. There are _____ days in January. _____ is a special month: it has 28 days. In leap years it has _____ days. Leap years come once every _____ years. 2000, 2004, and 2008 were leap years.
8. Halves or quarters? Look carefully at each shape, then write $\frac{1}{2}$ or $\frac{1}{4}$ in the division.

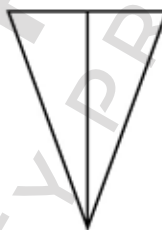
a.



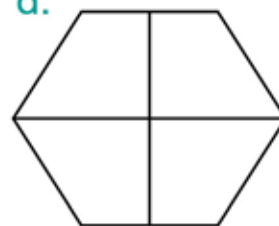
b.



c.



d.



9. Solve these.

a. Madiha walked 200 m from her house to the grocer's shop and 480 m from the shop to the park. How far did she walk altogether?

b. Mother buys 200 g of butter, 520 g of sugar, and 100 g of nuts. How much does her shopping bag weigh?

c. Anis weighs 4 kg 800 g. Sahir weighs 4 kg 214 g. How much heavier is Anis than Sahir?

d. A jug contains 950 ml of juice. Maheen drinks 580 ml. How much juice is left?

Addition

Objective:

Children learn the concept of addition with bigger numbers.

Materials required:

- Portable board, chalk, and two bowls.
- One bowl has chits with addition sums written on them. The other has toffees.
- A bag with cards having numbers on them. (As many numbers as there are children.)



Steps:

1. The children pick a card each from the bag. Say there are 20 children, then numbers 1 to 10 sit or stand in a circle around the board.
2. The child with the number 1 begins. They take out a slip from the bowl, and read the 'sum'. They write it on the board and work out the sum. A child from the group outside the circle checks whether the sum is right or wrong.
3. If the answer is correct, the child gets a toffee and passes the bowl to the child holding card number 2.
4. If they are wrong, they leave the circle and the child with number 1 takes their place, while the bowl passes to the child with card number 3.
5. The game continues.

Teacher's Note: This is a very useful game and can be repeated at different levels. It brings in the concept of 1st, 2nd, 3rd, and so on. Children learn to recognise numbers, addition and subtraction symbols, and they learn to write and add.

Subtraction

Objective: Children learn to further develop subtraction skills.



Materials required:

- Conical hats (can either be bought or made from chart paper), one per child.
- Half the hats have subtraction sums written on them, and the other half have the answers.

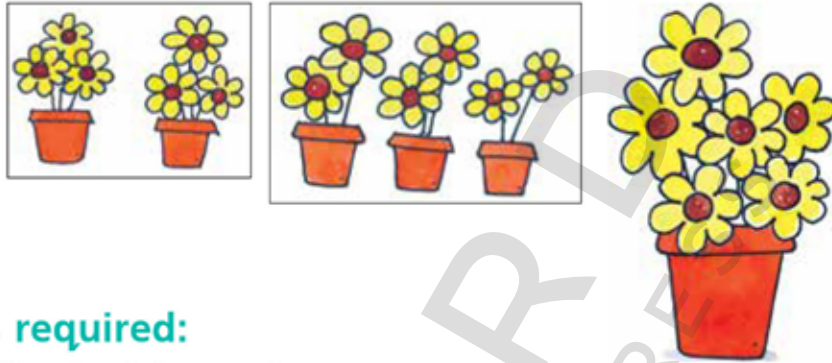
Steps:

1. Each child decorates the hat, as he or she likes.
2. The teacher divides the children into two teams. Each team stands on either side of a line facing each other.
3. Team A has the hats with the subtraction sums, while team B has the hats with the answers.
4. One child from team B wears a hat with the answer.
5. The children in team A find the hat with the correct subtraction sum and one child of this team wears that hat.
6. Both children, the one with the subtraction sum and the one with the answer walk off together as a pair.
7. The game proceeds.
8. Later, the teams can be interchanged and different numbers can be used on the hats.

Teacher's Note: Games such as these create an atmosphere which is conducive to calculating answers to simple additions and subtractions. The activity can be indoors or outdoors as is convenient.

Multiplication

Objective: Children learn that multiplication facts are the same both ways round.



Materials required:

- Pots filled with sand.
- Cut-outs of flowers with sticks as stems.

Steps:

1. The teacher places 3 pots in a row.
2. She asks three students to take 2 flowers each and put them in each pot.
3. They say together 3×2 flowers each = 6 flowers.
4. The teacher then asks 2 students to put 3 flowers each in 2 pots.
5. They say together 'two 3s are 6' or 'three 2s are 6', or '3 groups of 2' or '2 groups of 3' make 6.
6. The teacher keeps changing the number of flowers and pots to let children learn that multiplication facts remain the same when the position of numbers changes.

Teacher's Note: Use other methods to demonstrate the same principle. For example, 4 groups of 6 or four 6s are 24; 6 groups of 4 or six 4s are 24.

$$4 \times 6 = 24$$

$$6 \times 4 = 24$$

Objective: Children learn the concept of division as equal sharing.



Materials required:

- One bowl with 20 lollipops, an empty bowl, and four plates.

Steps:

1. The teacher calls four children to the front of the classroom.
2. She counts the children... 1, 2, 3, and 4. She takes out 4 lollipops from the bowl. The children take 1 each.
3. She writes on the board, $20 - 4 = 16$.
4. She counts the number of children again—1, 2, 3, and 4. She puts her hand in the bowl and takes out 4 more lollipops. She gives these 4 to the group, and they take 1 each. The teacher writes on the board, $16 - 4 = 12$.
5. She repeats this activity, till the bowl is empty, and she has written $12 - 4 = 8$; $8 - 4 = 4$; $4 - 4 = 0$
6. She counts the number of times the lollipops have been 'taken away' from the original number 20. She writes $20 \div 4 = 5$.
7. The children count the lollipops on their plates, and call out the number. Each child has 5 lollipops. The teacher explains how the 20 lollipops have been divided equally among 4 children.

Teacher's Note: Many more such examples need to be worked out and tabulated to clarify this concept. For example: I have 15 flowers; I need to put 3 flowers in each vase; how many vases do I need?

Objective: Make/complete geometrical patterns on a square grid according to one or two of the following attributes.

- Shape
- Size
- Orientation

Material required:

- Cutouts of shapes, cubes, discs, tube pasta in three colours, and beads of different shapes with three colours
- String, square grid paper, card sheet, gluestick

Steps:

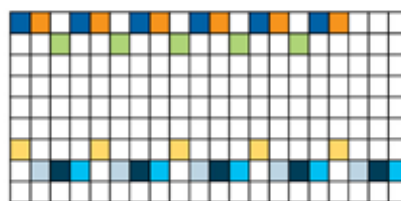
1. The teacher distributes card sheets with two different patterns and ask the students to draw the next two shapes.



Complete the pattern by drawing 2 more shapes.



2. She/he shows them the given pattern on square grid and distributes square grid sheets in class. Asks them to choose a colour to make their own pattern.



3. She distributes the shape cutouts and a sheet of paper in the groups. Asks the students to make two patterns with their shapes on the paper sheet.

4. She distributes numbers of coloured pasta and strings to each group and ask them to make a friendship band using a pattern for their friend.



5. She distributes different colour beads of different sizes among the students and asks them to make a necklace by pasting them on a sheet of paper.

