National MATHEMATICS Textbook

Grade 4

Papua New Guinea
Department of Education

From
the People of Japan

JICA

QUIS-ME
We love Mathe and Science !
Department of Education & JICA

Issued free to schools by the Department of Education

First Edition

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Acknowledgements

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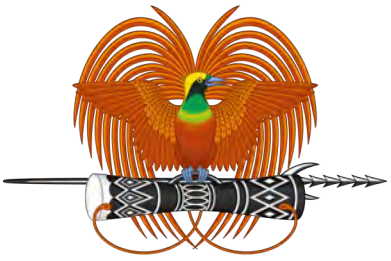
The Mathematics curriculum officers, textbook writers, pilot teachers from NCD and Central Provinces and the Subject Curriculum Group (SCG) are acknowledged for their contribution in writing, piloting and validating this textbook.

The Curriculum Panel members, members of the Subject Advisory Committee (SAC) and the Basic Education Board of Studies (BEBOS) are also acknowledged for their advice, recommendation and endorsement of this textbook.

A special acknowledgement is given to the People and the Government of Japan for the partnership and support in funding and expertise through Japan International Cooperation Agency (JICA) - QUIS-ME Project with Curriculum Development Division (CDD).

National Mathematics Textbook

Grade 4



Papua New Guinea
Department of Education

From
the People of Japan

Minister's Message

Dear Grade 4 Students,

I am honoured to give you my message in this National Mathematics Textbook.

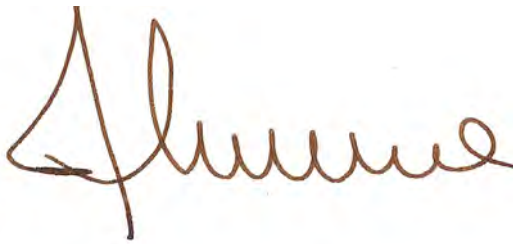
The Government of Papua New Guinea has been working to improve students' learning of mathematics. This textbook was developed by our excellent Curriculum Officers, Textbook Writers and Pilot Teachers, who have worked together with Japanese specialists for three years. This is the best textbook for grade 4 students in Papua New Guinea and is comparable to international standards. I would like to thank the Government of Japan for its support in improving the quality of learning for children in Papua New Guinea.

I am excited about this textbook because it covers all topics necessary for learning in grade 4. You will find many photographs, illustrations, charts and diagrams that are interesting and exciting for learning. I hope they will motivate you to explore more about mathematics.

Students, Mathematics is a very important subject. It is also very interesting to learn. Do you know why? Because mathematics is everywhere in our lives. You will use your knowledge and skills of mathematics to calculate cost, to find time, distance, weight, area, and many more. In addition, mathematics will help you to develop your thinking skills, such as how to solve problems using a step-by-step process.

I encourage you to be committed, enjoy and love mathematics, because one day in the future you will be a very important person, participating in developing and looking after this very beautiful country of ours and improving the quality of living.

I wish you a happy and fun learning experience with Mathematics.



Hon. Nick Kuman, B.ApSci.UWSyd, MP

Minister of Education

Message from the Ambassador of Japan

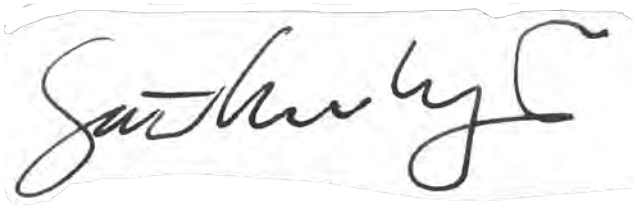
Greetings to Grade 4 Students of Papua New Guinea!

It is a great pleasure that the Department of Education of Papua New Guinea and the Government of Japan worked together to publish national textbooks on mathematics for the first time.

The officers of the Curriculum Development Division of the Department of Education made full efforts to publish this textbook with Japanese math experts. To be good at mathematics, you need to keep studying with this textbook. In this textbook, you will learn many things about mathematics with a lot of fun and interest, and you will find it useful in your daily life. This textbook is made not only for you but also for the future students.

You will be able to think much better and smarter if you gain more knowledge on numbers and diagrams through learning mathematics. I hope that this textbook will enable you to enjoy learning mathematics and enrich your life from now on. Papua New Guinea has a big national land with plenty of natural resources, and a great chance for a better life and progress. I hope that each of you will make full use of knowledge you obtained and play an important role in realizing such potential.

I am honoured that, through the publication of this textbook, Japan helped your country develop mathematics education and improve your ability, which is essential for the future of Papua New Guinea. I sincerely hope that, through the teamwork between your country and Japan, our friendship will last forever.



Satoshi Nakajima

Ambassador of Japan to Papua New Guinea

Share ideas with your friend!

Let's learn Mathematics, it's fun!

Secretary's Message

Dear students,

This is your Mathematics Textbook that you will use in Grade 4. It contains very interesting and enjoyable activities that you will be learning in your daily Mathematics lessons.

In our everyday lives, we come across many Mathematical related situations such as buying and selling, making and comparing shapes and their sizes, travelling distances with time and cost, and many more. These situations require mathematical thinking processes and strategies to be used.

This textbook provides you with a variety of mathematical activities and ideas that are interactive and allow you to learn with your teacher or on your own as an independent learner. Key concepts for each topic are highlighted in the summary notes at the end of each chapter.
The mathematical skills and processes are expected to be used as learning tools to understand the concepts given in each unit or topic and apply these in solving problems.

You are encouraged to be like a young Mathematician who learns and is competent in solving problems and issues that are happening in the world today. You are also encouraged to practice what you learn everyday both in school and at home with your family and friends.

I wish you all the best in studying Mathematics using this textbook.

Dr. Uke Kombra, PhD
Secretary for Education

Friends learning together in this textbook


Mero


Naiko


Sare


Gawi


Kapi
(Kapul)


Kekeni


Ambai


Vavi


Yamo


Koko
(Kokomo)

Symbols in this textbook


- Discovered Important Ideas


- Important definition or terms.


- What we will do in the next activity.

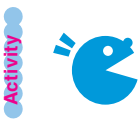

- When you lose your way, refer to the page number given.


- You can use your calculator here.


- Practice by yourself. Fill in your copy.


- New knowledge to apply daily life

- Let's do the exercise.



- Let's do mathematical activities by students

- Let's fill numbers in and complete the expression to get the page number

What We Learned In Grade 3

Numbers and Calculations

2 nd grade

Numbers up to 10000

Thousands place	Hundreds place	Tens place	Ones Place
			
two thousand	three hundred	Forty	Six
2	3	4	6

The number for 10 sets of 1000 is called "ten thousand" and written as 10000.

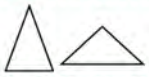
The numbers of two thousand, three hundred and forty six altogether is **"two thousand three hundred and forty six"**. It is written as 2346.

When multiplying and dividing large numbers with 10,000 or 1000s, we can use this idea.

We can make different quadrilaterals from triangles in Grade 4

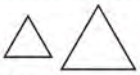
Triangles

A triangle with 2 equal sides is called **isosceles triangle**.



An isosceles triangle has two corners with equal size.

A triangle with all equal sides is called **equilateral triangle**.



Division

If you divide 12 pencils amongst 4 children equally, each child gets 3. In a mathematical sentence , it can be written as 12 ÷ 4 = 3, and read as; 12 divided by 4 equals 3.

12 ÷ 4 = 3 Answer 3 pencils

Total number | Number of children | Number to each child

The remainder in division should always be less than the divisor.

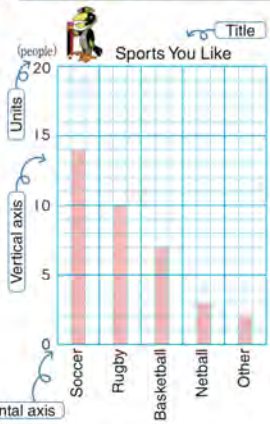
We can use different graphs to represent informations.

Bar Graph

How to Draw an Bar Graph

Sports You Like

Sports	Number of people
Soccer	14
Rugby	10
Basketball	7
Netball	3
Other	2
Total	36



(1) Write the type of sports on the horizontal axis.

(2) Think of the number of people per unit, make sure you can write the number of the largest group of people, and write numbers like 5 or 10.

(3) Write the title and the units on the vertical axis.

(4) Write a bar that matches the number of people.

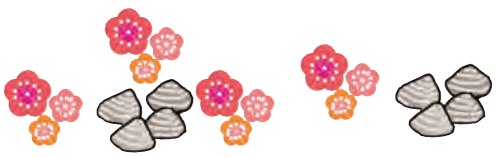


Table of Contents

Numbers and Operation

Grade 3

Large Numbers
Numbers to 100 millions

1 Large Numbers 2
(1) Large Numbers to 100 Million 3
(2) Large Numbers to Billion 6
(3) English Numeration 9
(4) Calculating Large Numbers 11

Grade 3

Division
Divisions with Remainders

2 Division 15
(1) Rules of Division 15
(2) Division of Tens and Hundreds 20

3 Thinking about How to Calculate 23
(1) Rules of Division 23

4 Angles 26
(1) The Sizes of the Angles 26
(2) The Angles of Triangle Rulers 33

Measurement

Grade 3

Triangle

6 Quadrilaterals 51
(1) Perpendicular Lines 53
(2) Parallel Lines 57
(3) Various Quadrilaterals 61
(4) Diagonals of Quadrilaterals 68

Geometric Figures

5 Division by 1-digit Numbers 37
(1) Division in Vertical Form 37
(2) Division of 2-digit Numbers 39
(3) The Calculation of (3-digit Numbers) ÷(1-digit Number) 43
(4) What Kind of Expression? 47

7 Division by 2-digit Numbers 73
(1) Division by 2-digit Numbers (1) 74
(2) Division by 2-digit Numbers (2) 78
(3) Rules of Division and Multiplication 81

Length of a Jump 84

Grade 3

Tables and Graphs

8 Line Graphs 86
(1) Line Graphs 88
(2) How to Draw Line Graphs 90
(3) Ideas for Drawing Line Graphs 91

Data and Mathematical Relations

9 Decimal Numbers 1 96
(1) How to Represent the Remaining Parts 96
(2) The Structure of Decimal Numbers 101
(3) Addition and Subtraction of Decimal No. 102

10 Round Numbers 108
(1) Rounding 109
(2) Rounding Up and Down 113
(3) Rough Estimates 114

Grade 3

(1) Addition and Subtraction 1
(2) Addition and Subtraction 2
(3) Multiplication 1
(4) Multiplication 2
(5) Thinking about How to Calculate
(6) Duration and Time
(7) Multiplication in Vertical Form
(8) Division
(9) Division with Remainders
(10) Circles and Spheres
(11) Large Numbers
(12) Length
(13) Triangles
(14) Tables and Graphs
(15) Multiplication with 2-digit Numbers
(16) Weights
(17) Fractions
(18) Math Sentences Using □
(19) Using Money in Our Life
(20) Summary of Grade 3

Grade 5

(1) Decimal Numbers and Whole Numbers
(2) Amount per Unit Quantity
(3) Multiplication of Decimal Numbers
(4) Congruence and Angles of Figures
(5) Division of Decimal Numbers
(6) Comparing Heights
(7) Volume
(8) Multiples and Divisors
(9) Fractions
(10) Addition and Subtraction of Fractions
(11) Area of Figures
(12) Multiplication and Division of Fractions
(13) Proportions
(14) Regular Polygon Circles
(15) Solids
(16) Rate and Graph
(17) Summary of the Grade 5

Grade 3
Addition and Subtraction
Multiplication (Rules, Vertical Form) Division

Grade 4
Division (Rules, Vertical Form)

11 Expressions and Calculations 121
(1) Represent the Expressions 121
(2) Rules for Calculations 125
(3) Calculation of Whole Numbers 127

16 Multiplication and Division of Decimal Numbers 170
(1) Calculations of (Decimal Number)×(Whole Number) 170
(2) Calculations of (Decimal Number)÷(Whole Number) 174
(3) Division Problems 178
(4) What Kind of Expression? 180

Grade 3
Decimal Numbers (Tenth place)

13 Decimal Numbers 2 148
(1) How to Represent Decimal Numbers 149
(2) Structure of Decimal Numbers 153
(3) Addition and Subtraction of Decimal Numbers 155

Grade 3
Fractions

17 Fractions 183
(1) Fractions Larger than 1 184
(2) Equivalent Fractions 187
(3) Addition and Subtraction of Fractions 189

14 Thinking about How to Calculate 160

12 Area 132
(1) Area 133
(2) Area of Rectangles and Squares 137
(3) Units for Large Areas 141

Measurement

Comparing Sizes
Grade 1
Grade 3
Tables and Graphs

15 Arrangement of Data 164
(1) Arrangement of Table 165
(2) Arrangement of Data 167

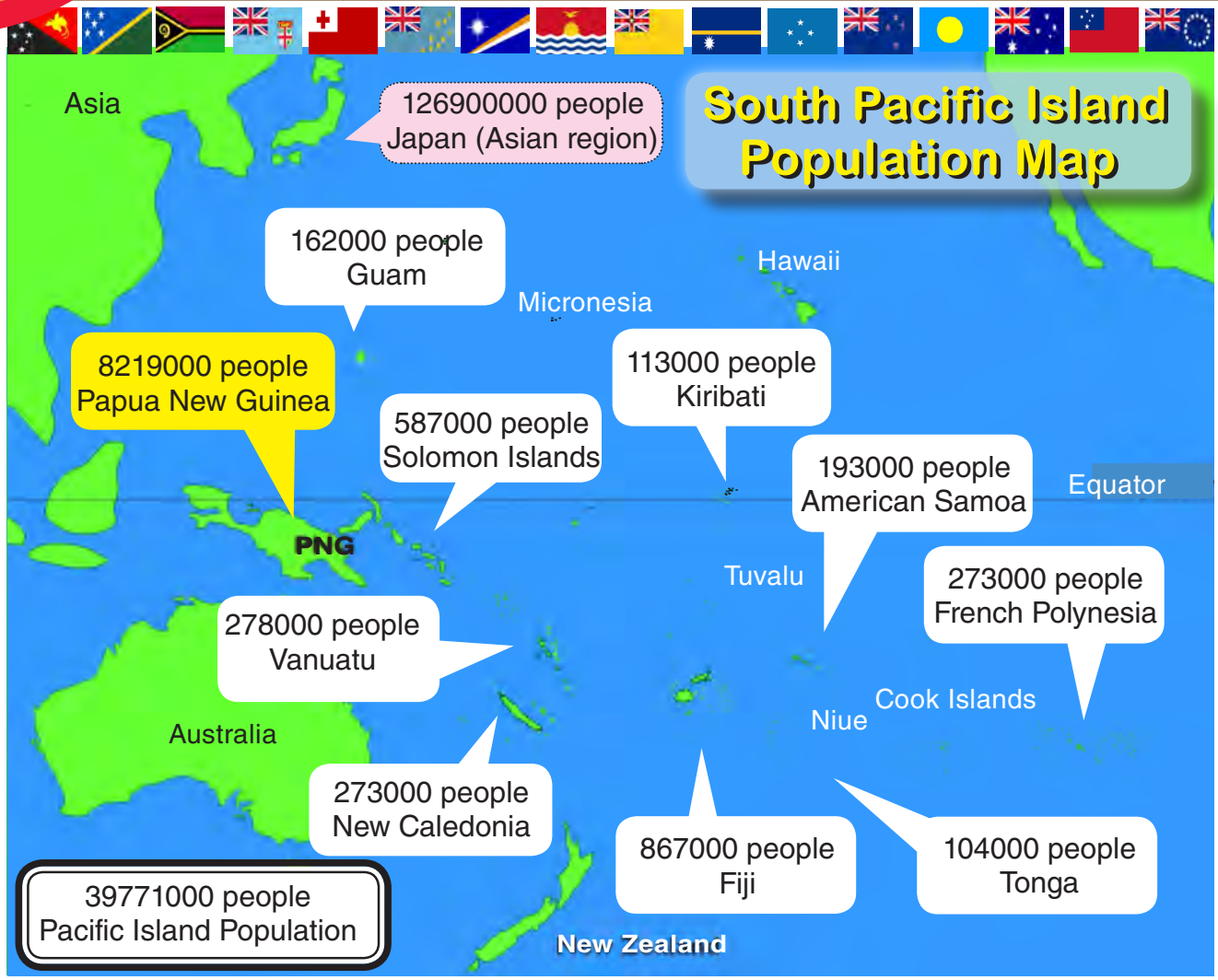
Grade 2
Shape of Boxes

18 Rectangular Prisms and Cubes 195
(1) Rectangular Prisms and Cubes 195
(2) Nets 197
(3) Perpendicular and Parallel Faces and Edges 201
(4) How to Represent Positions 205

19 Quantities Change Together 210
(1) Quantities Which Change Together 210
(2) Mathematical Sentence using □ and ○ 214

20 Summary of Grade 4 218

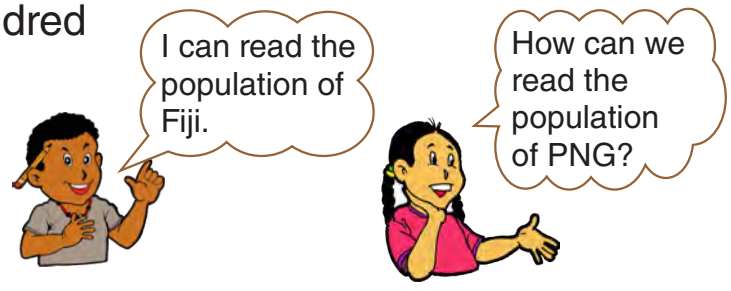
1 Large Numbers



We are studying the population of various Pacific countries and other countries. How do we read the numbers of their populations? Which countries have the population that is in hundred thousands?

Read the population of these countries.

hundred thousands	ten thousands	thousands	hundreds	tens	ones
8	6	7	0	0	0



1 Large Numbers to 100 Million

1 Let's consider how to read the population of Papua New Guinea.

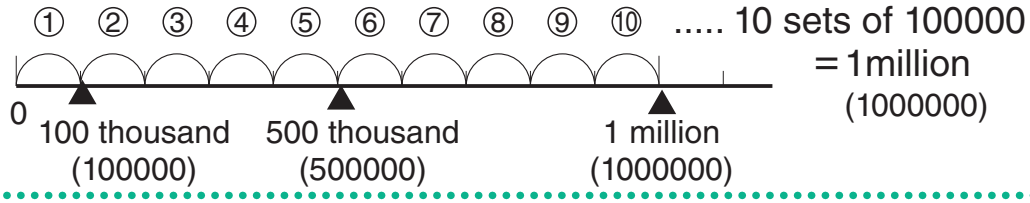
8219000 people

1. In which place value is 2?
2. In which place value is 8?

Let's consider how to read and write numbers larger than the hundred thousands place.

The number that is 10 sets of hundred thousand (100000) is written as 1000000 and is read as **one million**.

One million is a number with 1000 sets of one thousand.



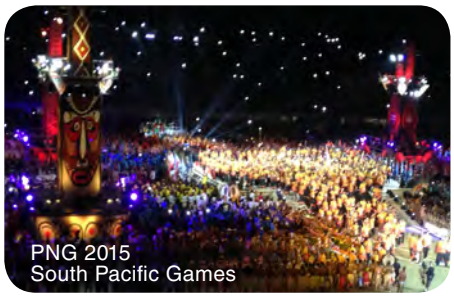
3. Read the population of Papua New Guinea.

	millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
	8	2	1	9	0	0	0

The number above is read as "Eight million, two hundred and nineteen thousand." It is written 8 219 000 with **space in every three-digits so it is easier to read.**

2 The following number represents the estimated cost of hosting the South Pacific Games held here in Papua New Guinea.

Estimated cost: 30 000 000 kina



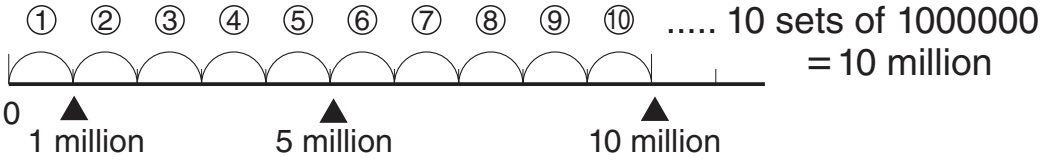
1. In which place value does 3 represent in the number?
2. How many 10 million are there in the value of 3?

Let's consider how to read and write numbers larger than the millions place.

3. Read the number below that shows the estimated cost of hosting the South Pacific Games in Papua New Guinea.

Millions			Thousands			Ones		
	ten millions	millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
	3	0	0	0	0	0	0	0

The number that is 10 sets of 1 million is written as 10 000 000 and is read as **ten million**. It is also written as 10 million. 10 million is a number with 10 sets of one million.



4. Fill in the population of the Pacific Islands and read it.

	Millions		Thousands			Ones			
		10 millions	millions	100 thousands	10 thousands	thousands	hundreds	tens	ones	
Pacific Islands							0	0	0	People

The total number of the people in the Pacific Islands is 39771000.

It is read as “thirty nine million, seven hundred and seventy one thousand”.

It is written as 39 771 000 with space in every three-digits.

100 sets of 1 million is hundred million.

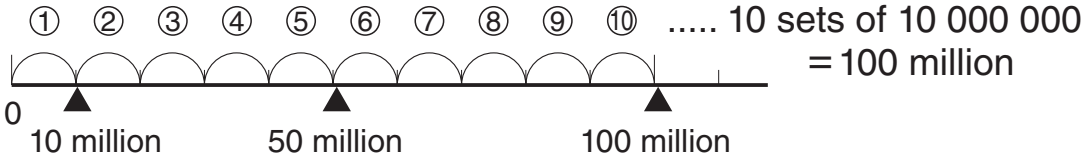
5 Fill in the population of Japan and read it.

	Millions			Thousands			Ones			
	100 millions	10 millions	millions	100 thousands	10 thousands	thousands	hundreds	tens	ones	
Japan					0	0	0	0	0	People

The number of population of Japan, 126900000, is written as 126 900 000 and read as one hundred twenty six million and nine hundred thousand.

The number that is 100 sets of 1 million is written as 100 000 000, and is read as **hundred million**. It is also written as 100 million.

100 million is a number with 100 sets of one million.

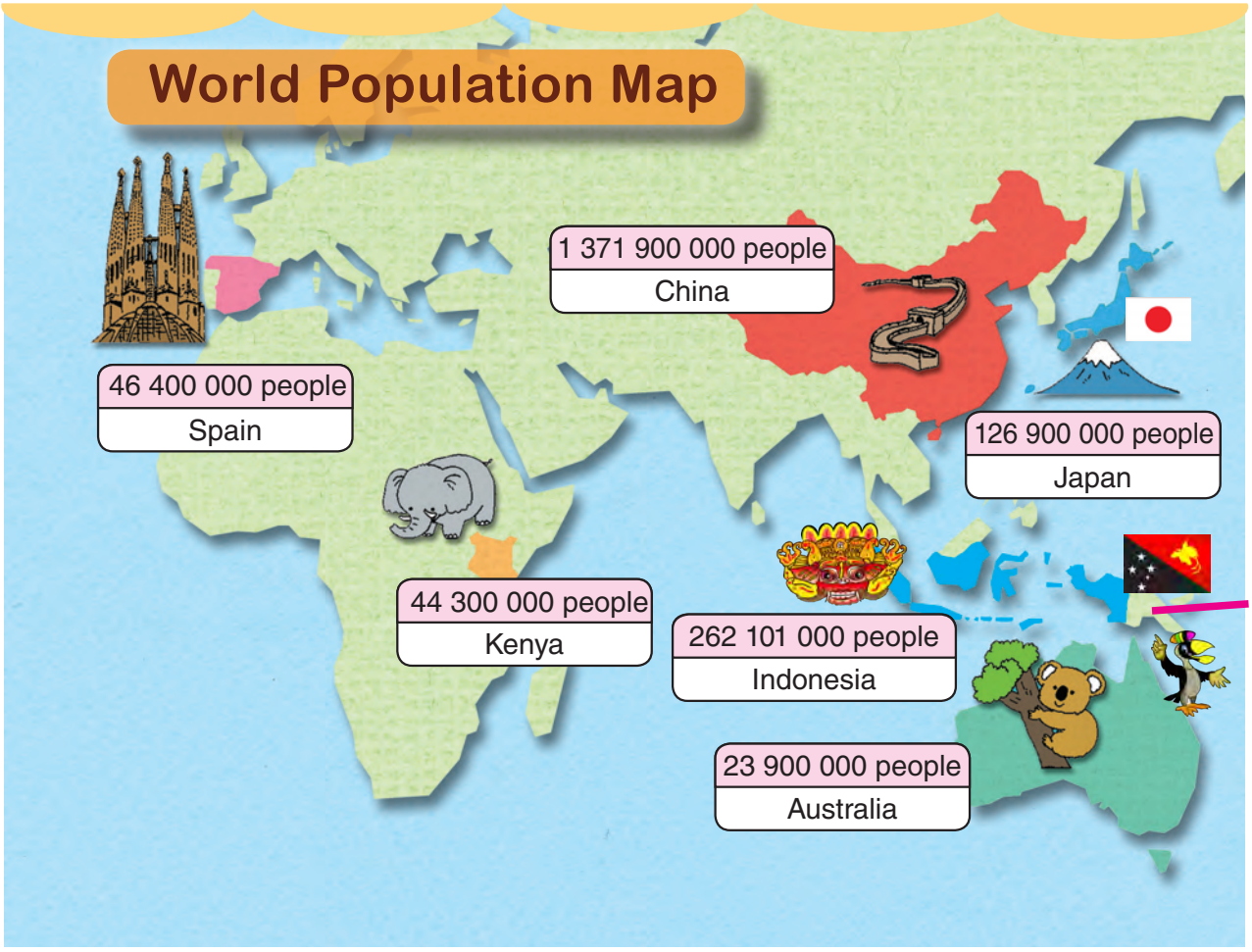


3 Write the following in numbers.

1 The number that is the sum of 10 sets of 100 thousand is 1 million, written as ☐.

2 The number that is the sum of 10 sets of 1 million is 10 million, written as ☐.

3 The number that is the sum of 100 sets of 1 million is 100 million, written as ☐.

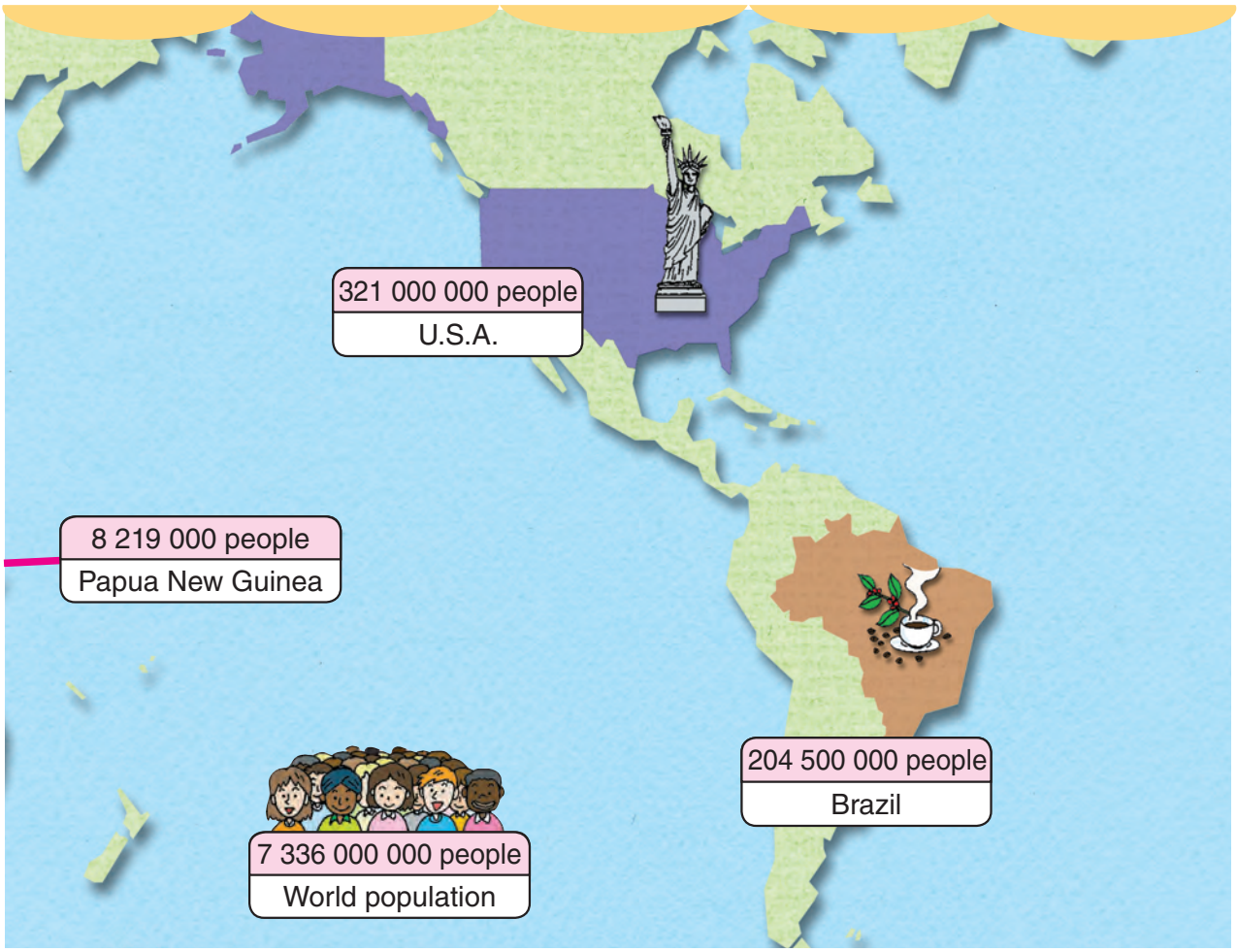


2 Large Numbers to Billion

1 The map above shows the population in figures of various countries around the world.

1. Write the population below and read them.

Countries	?			Millions			Thousands			Ones			
				100 millions	10 millions	millions	100 thousands	10 thousands	thousands	hundreds	tens	ones	
PNG													People
Australia													People
Japan													People
Indonesia													People
China													People
World													People



2 Let's consider how to read the population of China 1 371 900 000 people. In which place value is 3?

1 How many hundred millions are there in the value of 1?

(1 371 900 000)

2 Let's consider how to read and write numbers larger than the hundred millions place.

The number that is 10 sets of 100 million is written as 1 000 000 000 and is read as one **billion**. One billion is a number with 1 million sets of one thousand.

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ..... 10 sets of 100 000 000 = 1 billion

0 100 million 500 million 1 billion

3 Let's use the billions place for reading 137190000000 people.

Billions			Millions			Thousands			Ones		
		billions	100 millions	10 millions	millions	100 thousands	10 thousands	thousand	hundreds	tens	ones
		1	3	7	1	9	0	0	0	0	0

The number above is written 1 371 900 000 as "one billion, three hundred, seventy one million and nine hundred thousand.

3 Let's consider how to write the population of the World, 7 336 000 000 people.

A large number is read by every 3-digit number grouped from right such as ones, tens, hundreds place with naming for the unit of one, thousand, million, billion and so on. For writing large numbers, we give space for every three-digits.

1 Read the following numbers.

① 8 750 000 000 kina (The amount of exports in PNG in 2005).

② 4 161 290 323 kina (The amount of imports in PNG in 2005).

Oil palm, Kimbe

Coffee, Mt. Hagen

3 English Numeration

The name of places changes in every 3-digit as follows:

1 000 (thousand)

↓ ×1000

1 000 000 (million)
[1]

↓ ×1000

1 000 000 000 (billion)
[2] [1]

↓ ×1000

1 000 000 000 000 (Trillion)
[3] [2] [1]

↓ ×1000

1 000 000 000 000 000 (Quadrillion)
[4] [3] [2] [1]

"million" originated from "mile in Latin.

"bi -" means 2 in Latin.

Bicycle 

"Tri-" means 3 in Latin.

"Quad-" means 4 in Latin

Tripod

Quad Bike 

English numeration is originated from Latin and others. 3-digit numeral system is usually used in commonwealth countries. For reading large numbers, we have to count the number of 3-digit at first.

1 How many zeros are there in the following numbers?

① One million ② One billion ③ One trillion

2 Let's find the answer.

① 1234×1000 ② 1234×1000000

③ 1234×1000000000

3 Put a space in every 3-digits when reading numbers.

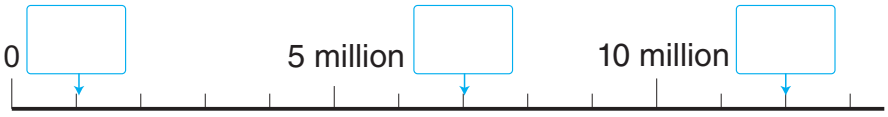
① 8219 ② 82190 ③ 821900

④ 8219000 ⑤ 82190000 ⑥ 821900000

Exercise

1 Fill in the ☐ with numbers.

①



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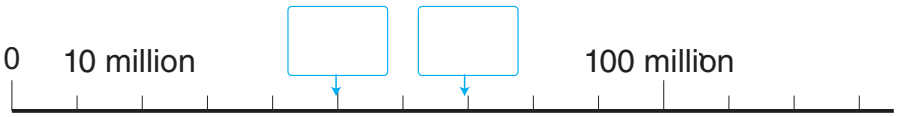

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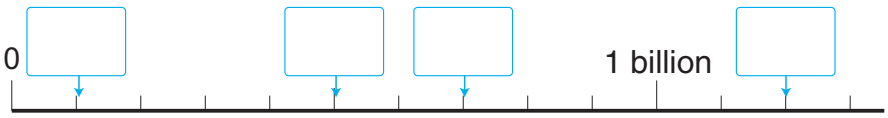


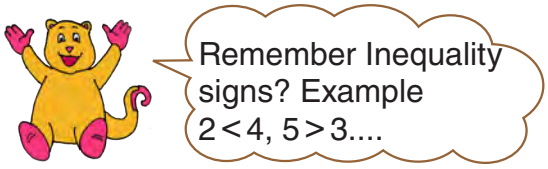
2 Draw a number line and represent the following numbers.

① 300 million ② 9 million ③ 1 billion and 800 million

3 Fill in the ☐ with the appropriate inequality signs.

① 110 950 000 ☐ 111 095 000

② 213 610 000 ☐ 203 161 000



4 Read the numbers from Ⓐ to Ⓕ on the following number lines.

①

②

4 Calculating Large Numbers

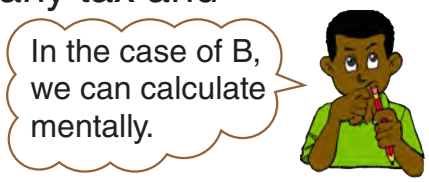
1 In PNG, company tax collection is expected to reach 1 200 000 000 kina and 3 300 000 000 kina for personal tax income.

1. How much was the total cost for company tax and for personal tax?

   Compare the following expressions.

   A. 1 200 000 000 + 3 300 000 000

   B. 1 billion, 200 million + 3 billion, 300 million



2. What was the difference between the tax collection for company tax and the personal tax income?

The result of adding numbers is called **sum**. The result of subtracting one number from another is called **difference**.

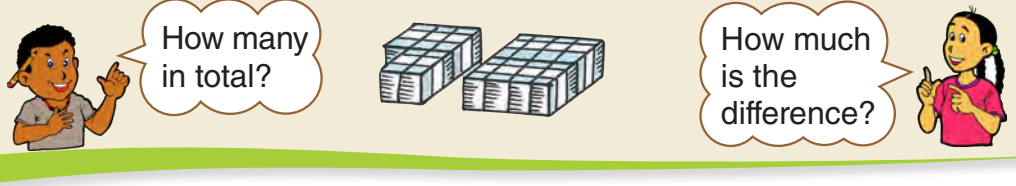
2 Let's find the sum and difference in the following problems.

1. The sum of 1 billion, 700 million and 2 billion, 900 million
2. 2 million and 350 thousand plus 5 million and 150 thousand
3. The difference of 1 billion and 8 million
4. 8 billion and 700 million − 5 billion and 200 million

[Sum] to add and combine

[Difference] to take away or subtract

500 million 800 million



3 The National Library has a monthly budget of 650 000 kina to purchase books.

Write the mathematical expression and calculate the annual budget?

The result of multiplying numbers is called **product**.

4 The Government spent 350 000 kina to buy 5 days meal and accommodation for a special meeting.

Write the mathematical expression and calculate the daily budget? ☐ Daily budget

The result of dividing one number by another is called **quotient**.

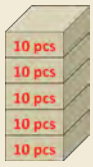
5 Let's find the products and quotients from the following problems.

1. 760 thousand × 2
2. 9 million and 10 thousand × 10
3. 8 million and 500 thousand ÷ 10
4. 9 billion ÷ 3

[Products] pile up, repeated addition.

[Quotient] Measure, compare, repeated subtraction.

500 million 800 million



Exercise

Pages 5 ~ 10

1 Let's summarise what we learned about large numbers.

① The number that is 10 sets of 100 thousand is ☐.

② 1 million is ☐ sets of 1 thousand.

③ 1 billion is ☐ sets of 100 million.

2 Let's read and write the following numbers.

Pages 3 ~ 9

① The number that is the sum of 2 sets of 1 billion and 237 sets of 1 thousand.

② The number that is the sum of 1 set of 1 billion and 45 sets of 10 thousand.

③ The number that is 10 times of 180 thousand.

Pages 11 ~ 12

3 Let's calculate the following expressions.

① 7 billion + 2 billion

② 735 million − 396 million

③ 526 million × 5

④ 6 billion ÷ 2

4 Let's make various numbers by using the 10 cards on the right.

Pages 9

① Make the largest number.

② Make the smallest number.

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

Let's calculate.

Grade 3 Do you remember?

① 416 + 254

② 527 + 3817

③ 652 + 194

④ 590 − 241

⑤ 708 − 474

⑥ 905 − 328

Problems

1 Fill in the ☐ with appropriate numbers and words.

● Understanding the place value system of large numbers.

① The 6 in 36 495 000 000 is in the ☐ place value.

② 465 billion is ☐ sets of 1 billion.

③ 1 million is equal to ☐ times 10 thousand.

2 Let's read the following numbers.

● Reading large numbers.

① The distance from the Sun to the Earth.

149 600 000 km

② Total budget for PNG Government in 2016.

14 209 000 kina

3 Let's write the following in numbers.

● Interpreting the explanation of numbers.

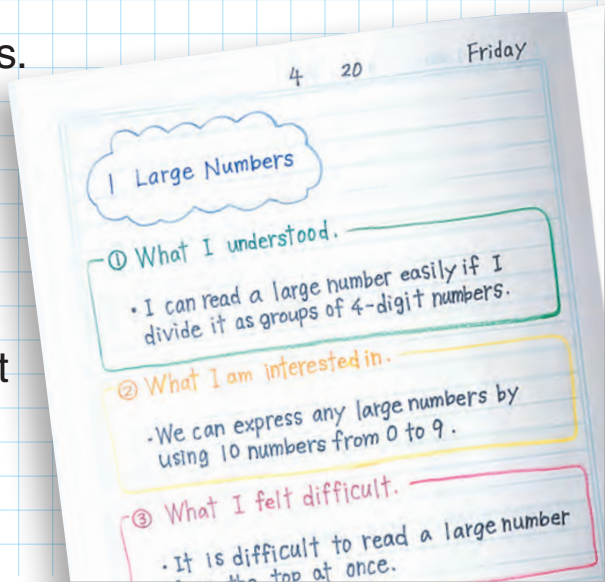
① The number that is 100 times 340 million.

② The number that is the sum of 3 sets of 1 billion and 48 sets of 100 million.

How to use your exercise book!

Write in your exercise book what you have learned about large numbers.

- ○ What I understood.
- ○ What was interesting for me.
- ○ What was too difficult.
- ○ What was good for me about my friend's ideas.
- ○ What I want to do next.



2 Division

1 Rules of Division

1 There are 24 lollies. They are divided equally among ☐ children.

How many lollies will each child receive?

1 Put various numbers into the ☐ and find the answer.

If lollies are divided among 4 children, how many will each child receive?

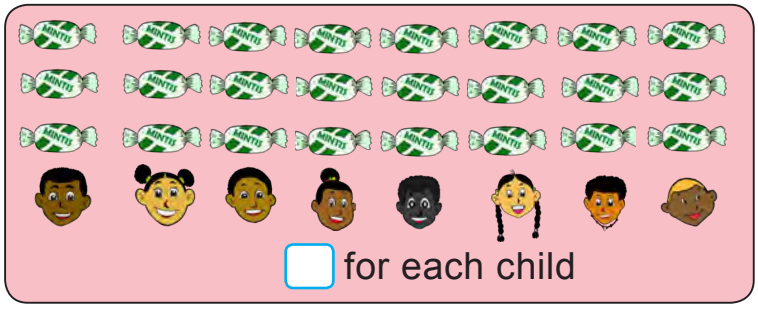
① If there are 8 children, how many lollies will each child receive?

② If lollies are divided among 4 children,

24 ÷ 4 = ☐

③ If lollies are divided among 8 children,

24 ÷ 8 = ☐

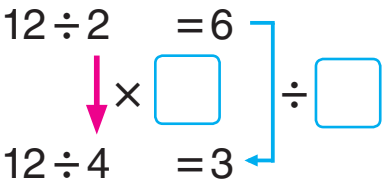


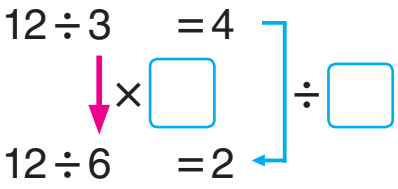
If the number of children becomes 2 times, the number of lollies for each child will be reduced into half.

Let's find the rules of division.

2 What rules are there between the divisor and the answer (quotient)?

3 Check this with some other division problems.



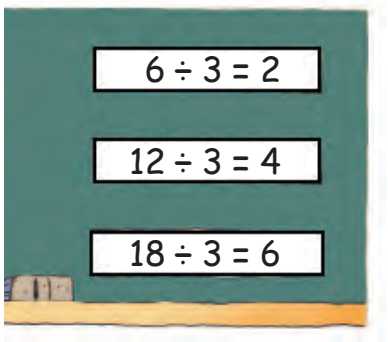


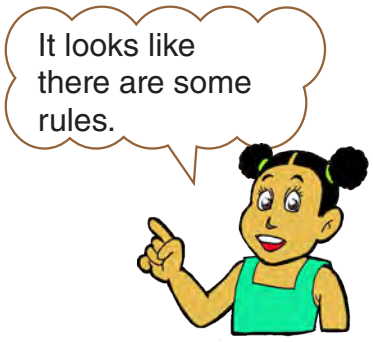
2 When the divisor is multiplied by a number, the answer (quotient) is divided by the same number.

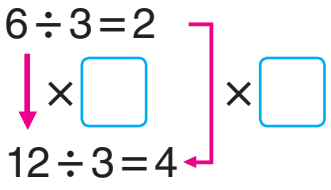
If there are 6, 12 or 18 lollies and each child receives 3. How many children can have lollies in each case?

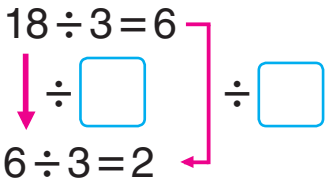
1 Write a mathematical sentence for each of them.

□ ÷ 3 = ○







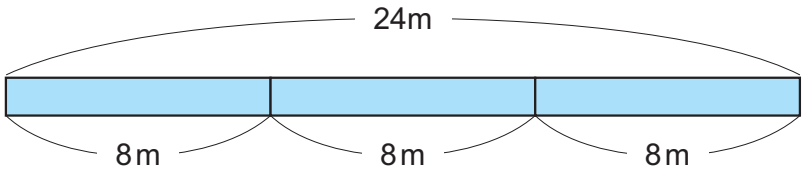


2 What rules are there for the dividend and the answer (quotient)? Check this with some other division problem.

If the divisors are the same, the dividends are multiplied or divided by a number □, quotient is given by multiplying or dividing by the same number □.

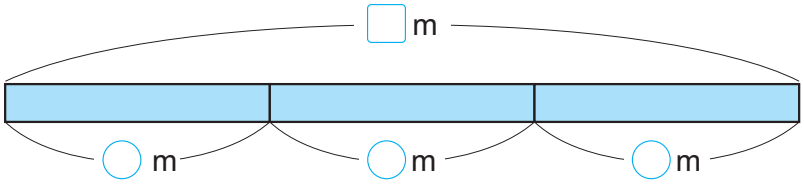
3 If you cut □ m each from ○ m of tape, you will get exactly 3 tapes.

1 There is a 24 m length of tape. If this is cut into parts of 8 m each, how many parts are there?



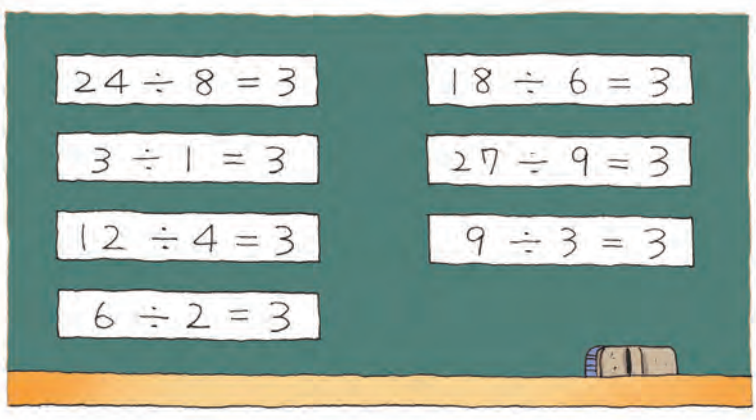
○ ÷ □ = △

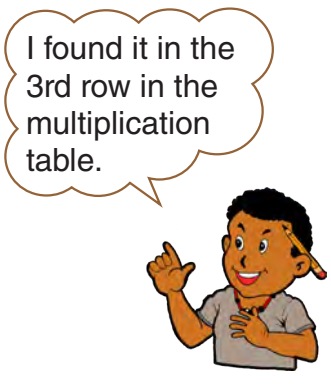
2 Let's write this as a division sentence using the □ and the ○. The length can be less than 27 m.



□ ÷ ○ = 3

3 Let's find the correct numbers for the □ and the ○. Are there any rules for the relationship between the mathematical sentences?





4 Line up the cards $12 \div 4 = 3$ and $6 \div 2 = 3$, and compare.

$$\begin{array}{ccccc} 6 & \div & 2 & = & 3 \\ \downarrow \times \square & & \downarrow \times \square & & \\ 12 & \div & 4 & = & 3 \end{array} \qquad \begin{array}{ccccc} 12 & \div & 4 & = & 3 \\ \downarrow \div \square & & \downarrow \div \square & & \\ 6 & \div & 2 & = & 3 \end{array}$$

If the dividend and the divisor are both multiplied by □, the answers are same.

If the dividend and the divisor are both divided by □, the answers are the same.

5 Check this with some other division problems.

$$\begin{array}{ccccc} 9 & \div & 3 & = & 3 \\ \downarrow \times \square & & \downarrow \times \square & & \\ 27 & \div & 9 & = & 3 \end{array} \qquad \begin{array}{ccccc} 6 & \div & 2 & = & 3 \\ \downarrow \times \square & & \downarrow \times \square & & \\ 24 & \div & 8 & = & 3 \end{array}$$

$$\begin{array}{ccccc} 9 & \div & 3 & = & 3 \\ \downarrow \div \square & & \downarrow \div \square & & \\ 3 & \div & 1 & = & 3 \end{array} \qquad \begin{array}{ccccc} 12 & \div & 4 & = & 3 \\ \downarrow \div \square & & \downarrow \div \square & & \\ 3 & \div & 1 & = & 3 \end{array}$$

We can check this using $18 \div 6 = 3$.

In division, the answers (quotients) are the same if the dividend and divisor are multiplied or divided by the same number.

4 Let's use the rules of division to find the correct numbers for the □.

1 $32 \div 8 = 8 \div \square$

2 $14 \div 2 = \square \div 8$

Let's Use the Rules of Division

5 Steve has 12 bottle tops. Viti has 3 bottle tops.

Steve 

Viti 

How many times more is Steve's bottle tops compared to Viti?

6 Ms. John has 1200 kina. Mr. Luke has 300 kina.

How many times more is Ms. John's money compared to Mr. Luke's?

1 Use the picture and find out.

Ms. John

Mr. Luke

2 Let's fill the correct numbers in the ☐.

1200 ÷ 300 = ☐

÷ ☐ ÷ ☐

☐ ÷ ☐ = ☐

Dividing 1200 by 10 will remove a 0. If you divide it by 10 again it will remove another 0. Which means dividing by 100 will remove two 0s.

7 How many times is 24000 kina compared to 4000 kina.

2 Division of Tens and Hundreds

1 If you were to divide 80 coloured papers equally between 2 friends, how many will each friend get?

1 Write a mathematical expression.

□ ÷ □

Total number of sheets　Number of friends

2 Write a mathematical expression by using groups of 10 sheets.

□ ÷ □

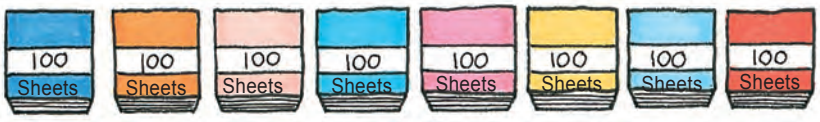
Total number of sheets　Number of friends

3 How many papers will each friend get?

2 If you were to divide 800 coloured papers equally between 2 friends, how many will each friend get?

1 Write a mathematical expression.

2 How many sheets of paper do we need in each group which are represented by the expression 8÷2?



3 How many will each person receive?

Exercise

Solve the following division by groups of 10 or 100.

① 60÷2　② 80÷4　③ 600÷2　④ 800÷4

Problems

1 Let's fill in the □ with a number by using the rules of division.

● Understanding the rules of division.

① $18 \div 2 = 9$ (×3) → $18 \div 6 = 3$ (÷ □)

② $30 \div 6 = 5$ (÷2) → $30 \div 3 = \square$ (× □)

③ $10 \div 2 = 5$ (× □) → $40 \div 2 = \square$ (×4)

④ $16 \div 2 = 8$ (÷2) → $8 \div 2 = 4$ (÷ □)

⑤ $12 \div 2 = 24 \div \square$

⑥ $18 \div 6 = \square \div 2$

2 Let's calculate.

● Understanding dividing by ten and hundred.

① $40 \div 4$　② $60 \div 3$　③ $50 \div 5$

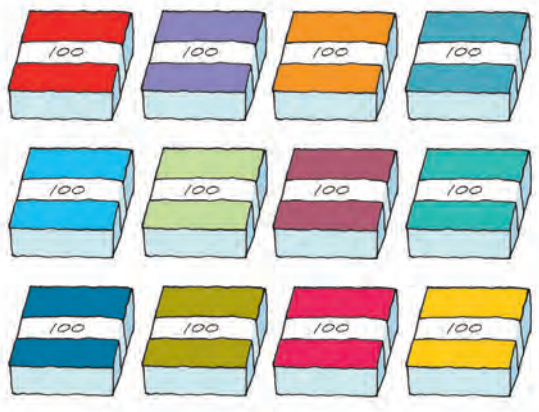
④ $300 \div 3$　⑤ $400 \div 2$　⑥ $900 \div 3$

3 You must divide 1200 papers into bundles of 300.

How many bundles can you make?

Think about how to find the answer by using the answer (quotient) of $12 \div 3$.

● Calculating by rules of division.



Problems

1 Let's fill in the ☐ with number by using the rules of division.

● Understanding the rules of division.

① 32 ÷ 4 = 8
×2 ↓
32 ÷ 8 = 4
÷ ☐

② 24 ÷ 6 = 4
÷2 ↓
24 ÷ 3 = ☐
× ☐

③ 10 ÷ 2 = 5
× ☐ ↓
60 ÷ 2 = ☐
×6

④ 32 ÷ 4 = 8
÷2 ↓
16 ÷ 4 = 4
÷ ☐

⑤ 14 ÷ 7 = 28 ÷ ☐

⑥ 12 ÷ 6 = ☐ ÷ 2

2 Let's calculate.

● Understanding dividing by ten and hundred.

① 50÷5 ② 80÷4 ③ 70÷7

④ 500÷5 ⑤ 800÷2 ⑥ 600÷3

3 If you were to divide 600 coloured papers equally between 3 friends, how many will each friend get?

① Write a mathematical expression.

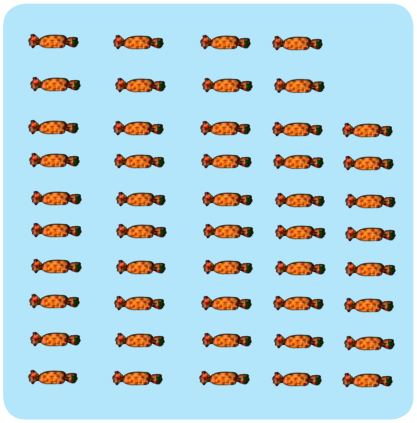
② How many sheets of paper do we need in each group which are represented by the expression 8÷2?

3 Thinking about How to Calculate

1 Rules of Division

1 There are 4 packets with 12 lollies each. All 48 lollies are divided equally among 3 children.

How many lollies will each child receive?



1 Write a mathematical expression.

□ ÷ □

Total number of lollies — Number of children

2 Think about how to calculate the answer by using what you have learned.

Think about how to calculate your answer in different ways and explain your ideas using figures or mathematical expressions.

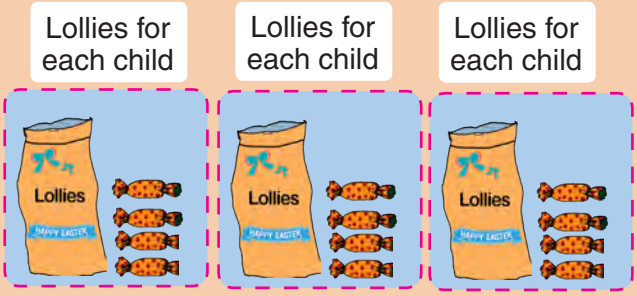
Will the answer be larger than 10?

Ambai's idea

Firstly, distribute a packet to each child. Then, distribute the 12 lollies to 3 children.

12 ÷ 3 = 4

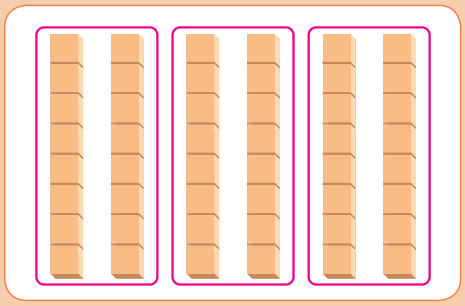
There are 12 lollies in each packet, so the amount of lollies for each child will be 12 + 4 = 16.



Activity

Yamo's idea

I looked for a slot in the multiplication table with 48 in $8 \times 6 = 48$.
Then, I arranged blocks in the shape of 8×6 and divide them into 3.

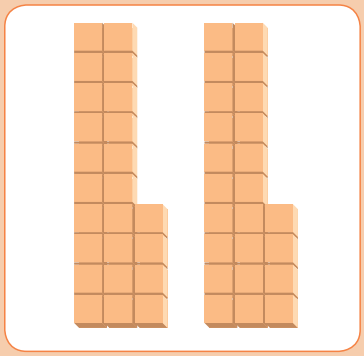


$6 \div 3 = 2$ so,

$8 \times 2 =$ ☐

Mero's idea

If you divide 48 by 2 it becomes 24.



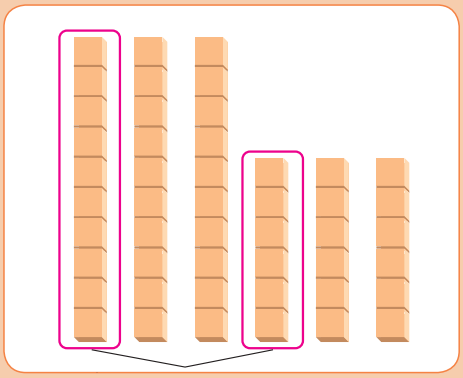
$48 \begin{cases} 24 \div 3 = 8 \\ 24 \div 3 = 8 \end{cases}$

There are 2 groups of 8, so

$8 \times 2 =$ ☐

Vavi's idea

$48 = 30 + 18$



Lollies per person

$30 \div 3 = 10 \quad 18 \div 3 = 6$

$10 + 6 =$ ☐

Naiko's idea

$48 \div 6 = 8$

$\div 2$ ↓ $\times 2$ ↑

$48 \div 3 =$ ☐

I used the rule of division. Because the dividends are the same, dividing the divisor in half will make the answer to be multiplied by 2.

2 Let's think about how to calculate 56 ÷ 4.

Let's Report after exploring.

Explain your findings to your classmates in the following.

- How did you explore? Methods and Ideas.
- What did you understand? Explain with examples.
- What did you find? Write down the pattern.

Let's think about how to divide 56 ÷ 4

Write a title.

1 Ideas and reasoning

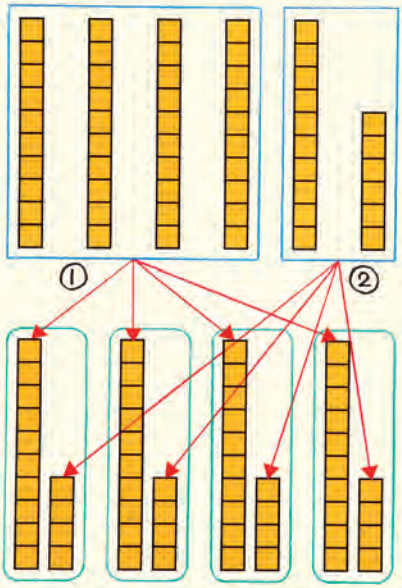
- First, divide in 4 sets of 10s.
- Then, divide the remaining by 4.

Write your ideas about how you solved it.

2 How you solved

Represent your solutions in words, pictures and expressions.

(picture)



(expression)

① $40 \div 4 = 10$

② $16 \div 4 = 4$

Add together to make $10 + 4 = 14$

Answer 14

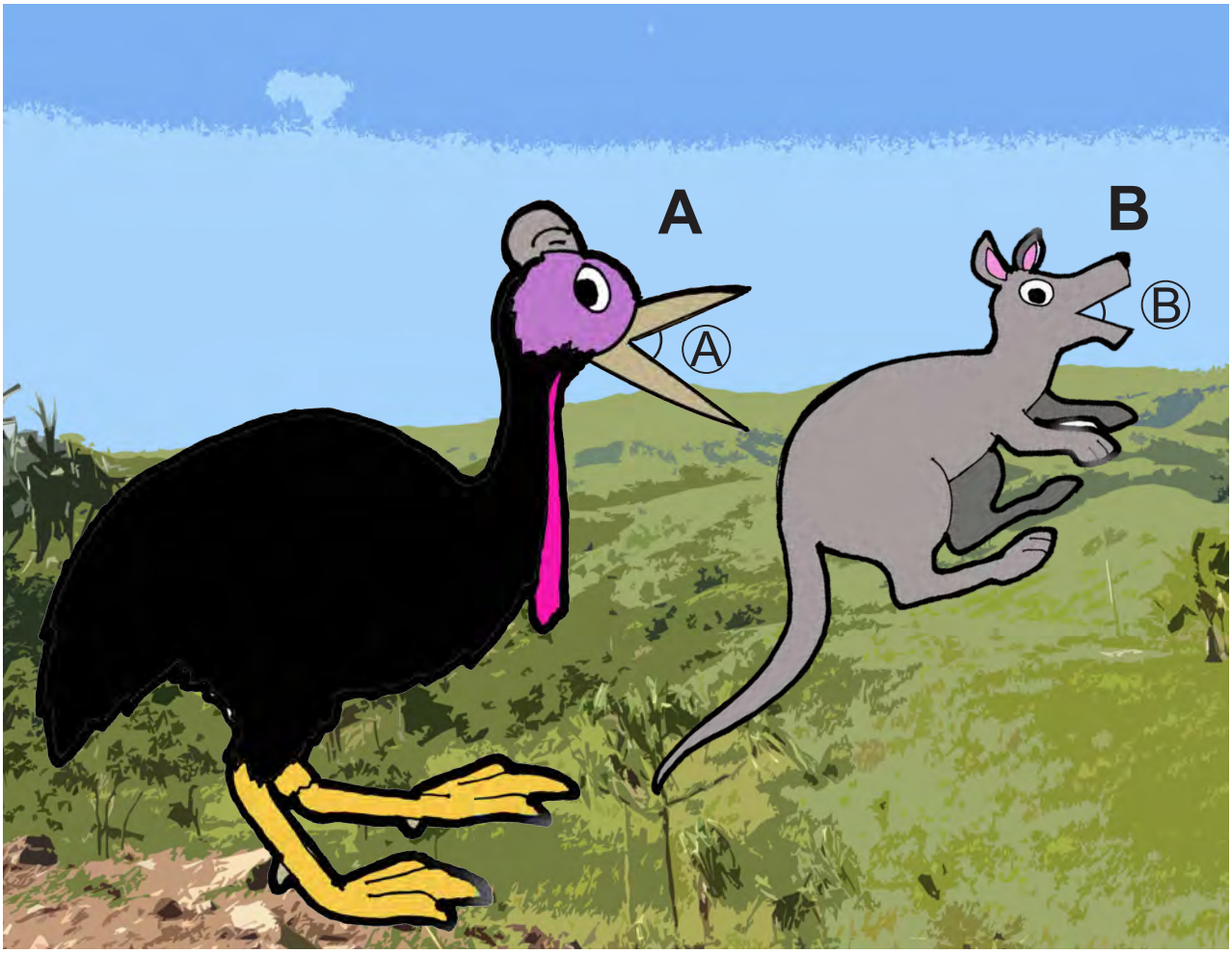
3 What you learned

Write down things you understood or found out.

Even if the dividend is larger, you can solve the problem by what you learned so far. Just divide the dividend by 2.

Activity

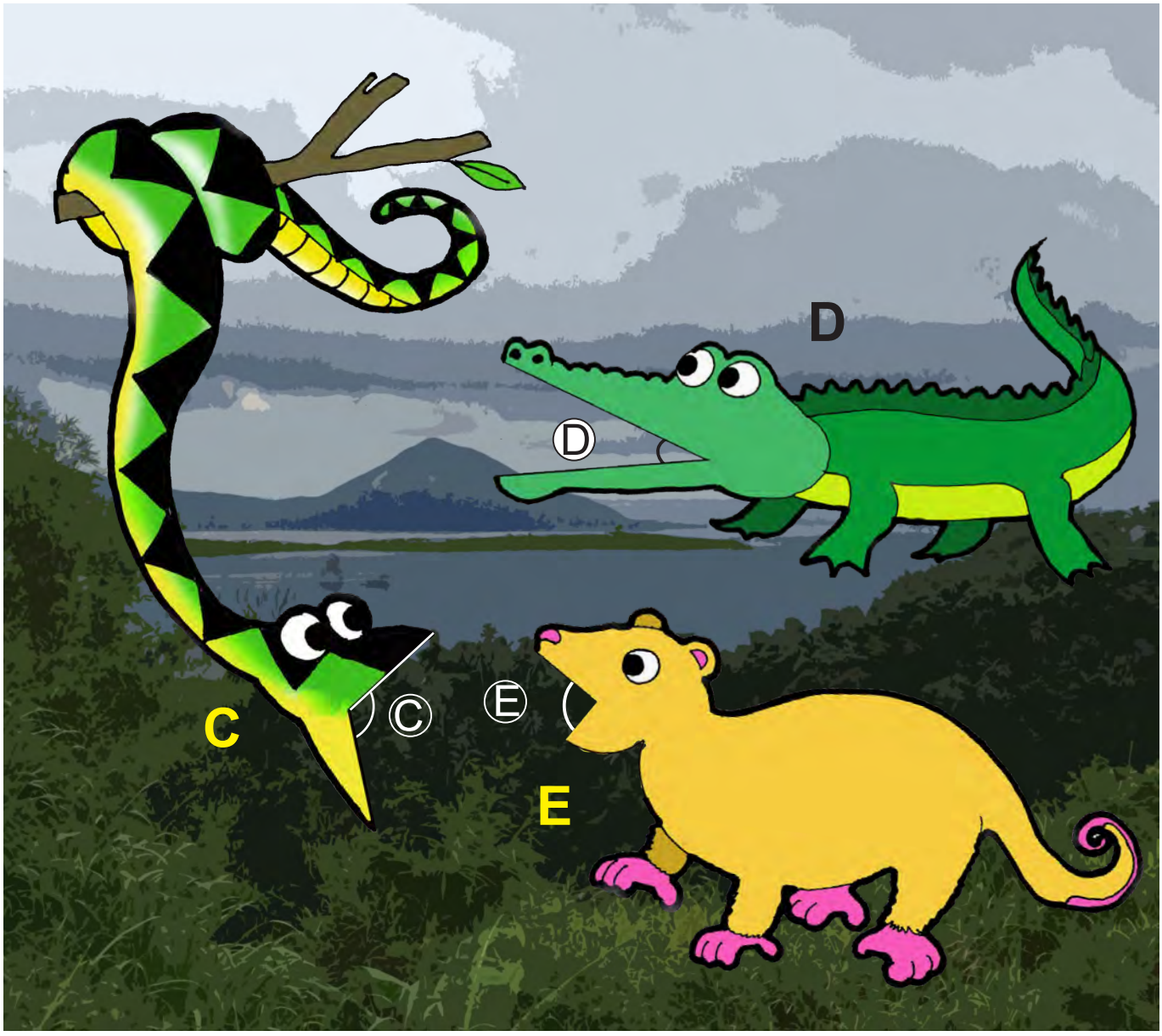
4 Angles



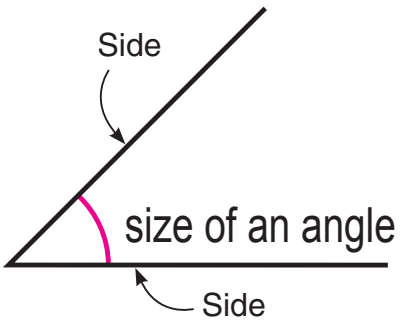
1 The Sizes of the Angles

1 Look at the open mouth of the animal from A ~ E.

1. Which animal has opened its mouth the widest?
2. Which animal has opened its mouth the narrowest?



The amount of space formed by rotating one side of a line from another side is called the **size of an angle**.



Name the above animals in order from small to big angles of their open mouth.

Let's investigate how to measure and construct an angle.

Activity

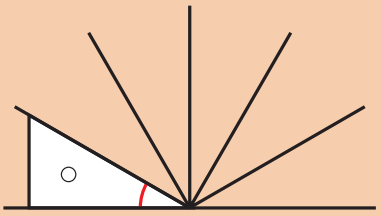
Activity

Sare's idea

I trace the angles on a sheet of paper and compare them by placing one over the other.

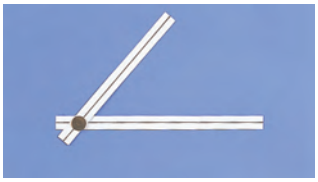
Kekeni's idea

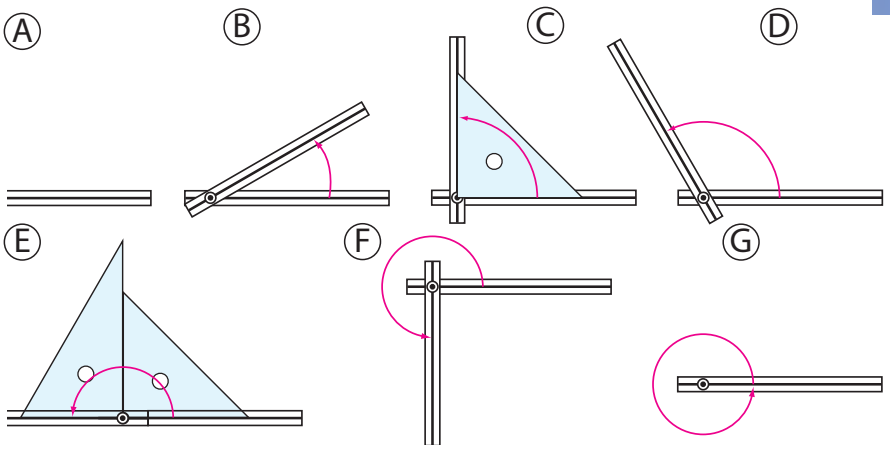
I measure the sizes of the angles by making a tool to count how many times the triangle fits the angles.



The size of an angle is determined by the amount of space between sides and not the lengths of the sides.

2 Move the cardboard bars as shown on the right and make different angles.





If we move one bar, the angle becomes larger.

The size of angle Ⓔ is **2 right angles**.

Which angles have 1 right angle, 2 right angles, 3 right angles and 4 right angles?

4 right angles are called **"angle of one revolution"** and **2 right angles** are called **"angle of a half revolution"**.

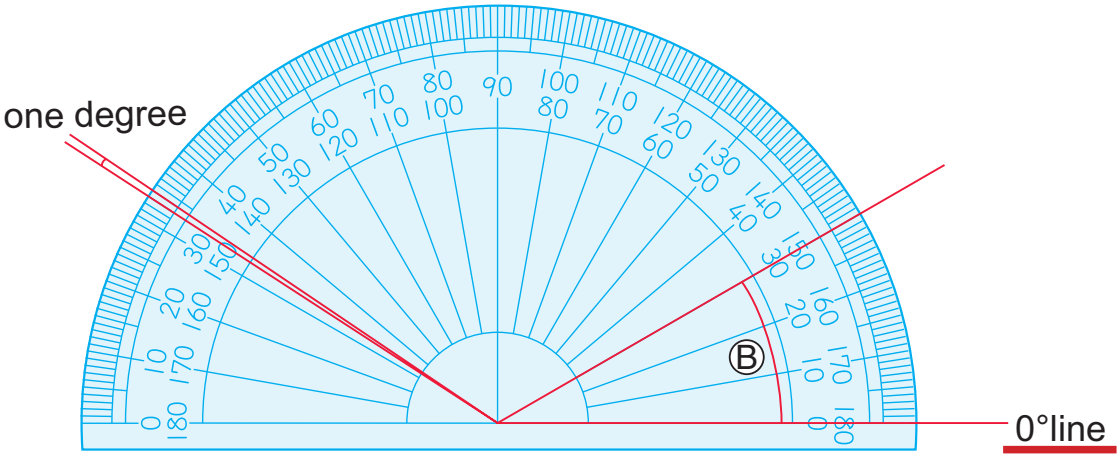
How to Express the Size of Angles

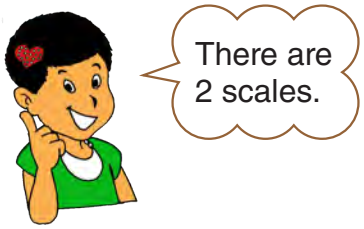
There is a unit to express the size of angles more clearly.

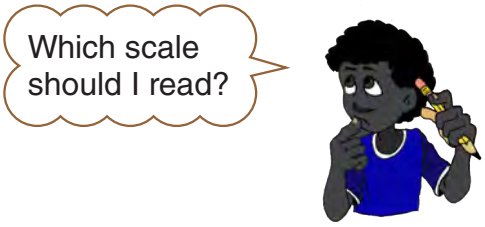
Degree is a unit to express the size of angles. The angle of one revolution is divided into 360 parts. The size of one part is one degree and is written as 1°.

3 A **Protractor** is used to measure the size of angles more accurately.

1 How many degrees is angle Ⓑ in 1?







2 How many degrees are in angles Ⓒ, Ⓓ, Ⓔ, Ⓕ and Ⓖ in 2?

Find the degree by applying the knowlege of 1 right angle = 90°

1 right angle = 90° , 4 right angles = 360°

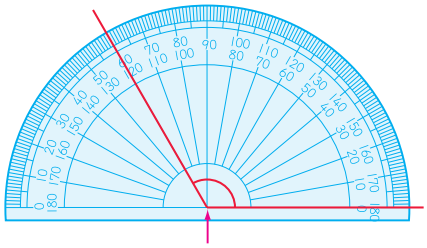
The size of an angle is simply called the **angle**.

How to Use a Protractor

① Put the centre of the protractor over the vertex of the angle.

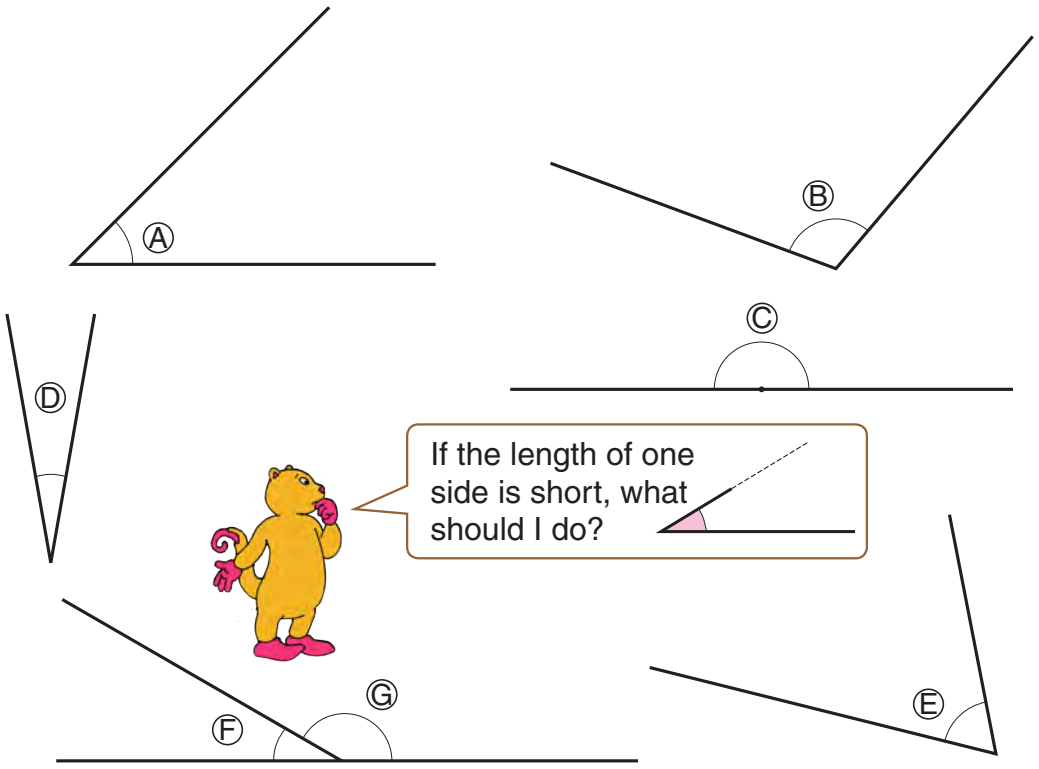
② Put the 0° line over one side of the angle.

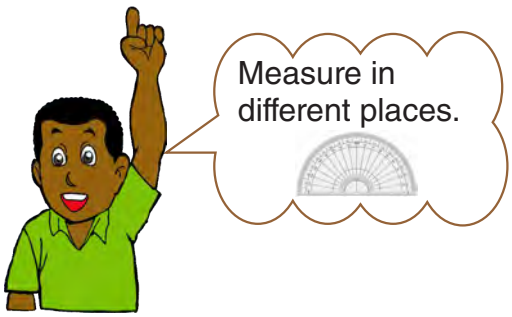
③ Read the scale that is over the other side of the angle.



Vertex of the angle is the centre of the protractor.

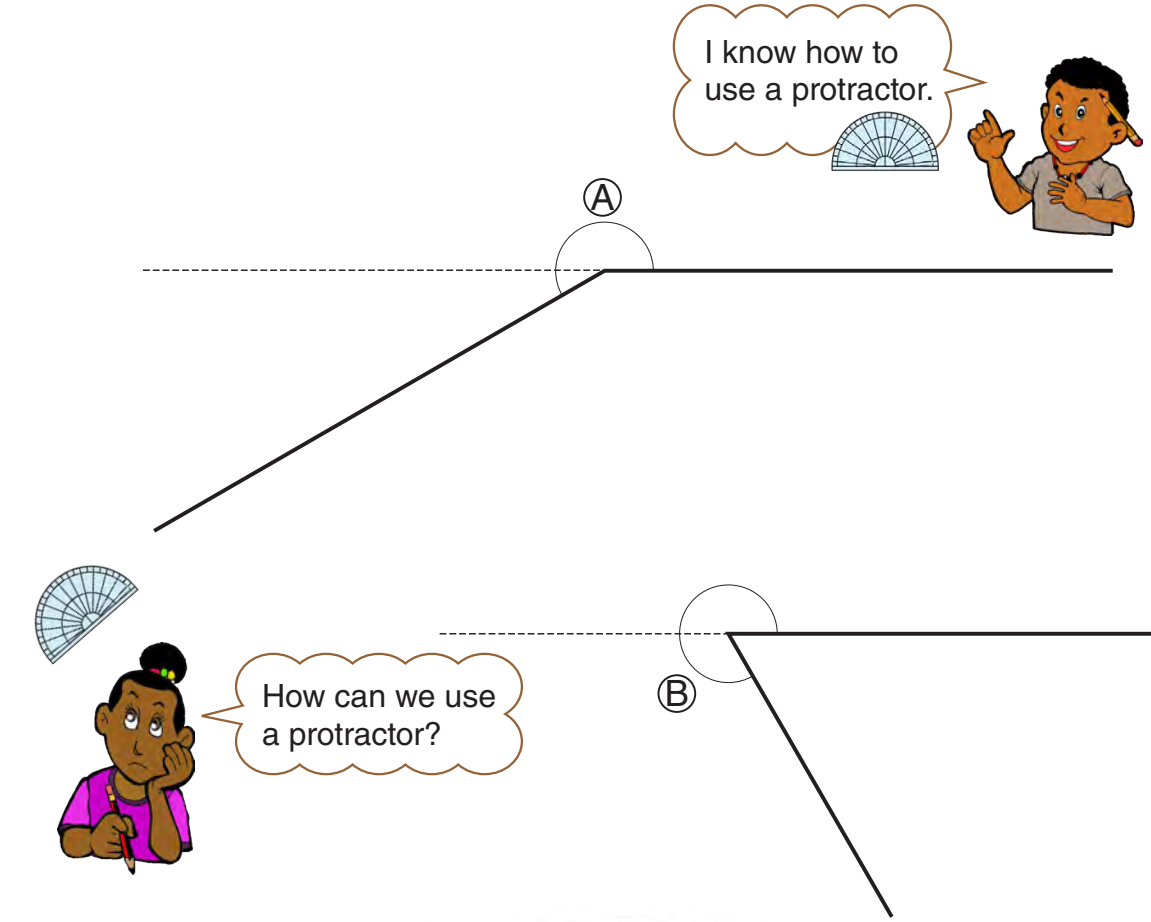
4 Measure the following angles.



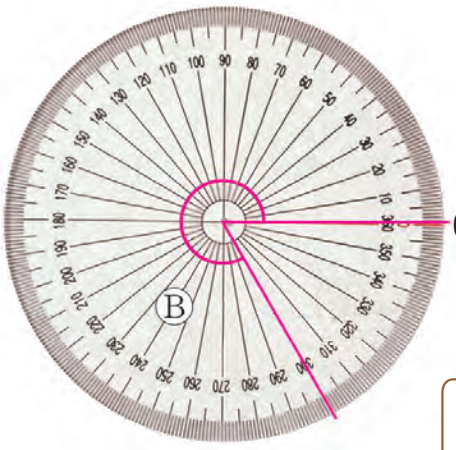


Activity

5 Let's find a way to measure angles that are larger than 180°.

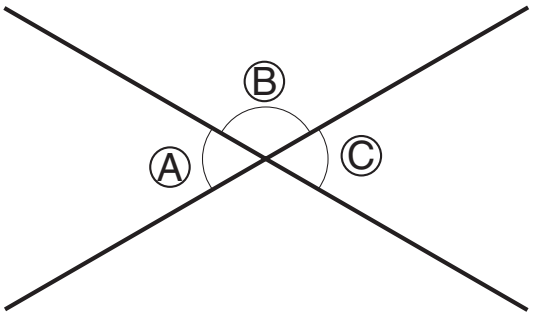


By using a 360° protractor, you can measure an angle in one measurement.



Intersecting lines are lines that cross over each other.

6 The figure on the right shows 2 intersecting lines.



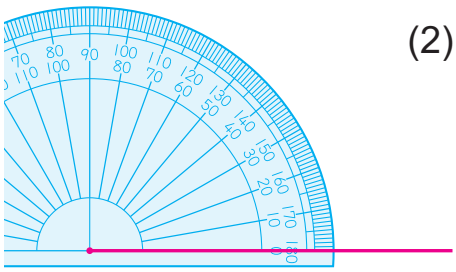
1. Angle Ⓐ is 60° . How many degrees is angle Ⓑ ?
2. Compare angles Ⓐ and Ⓒ .

How to Draw Angles

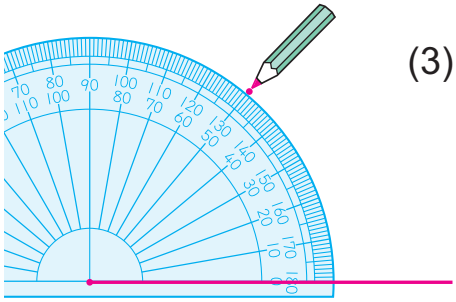
7 Let's draw a 50° angle.

1. Draw a straight line from a point that will become the vertex of the angle.
2. Place the centre of a protractor over the vertex of the angle. Place the 0° line over one side of the angle.
3. Write a point at the 50° mark.
4. Draw a line between the vertex and the point to make the other side of the angle.

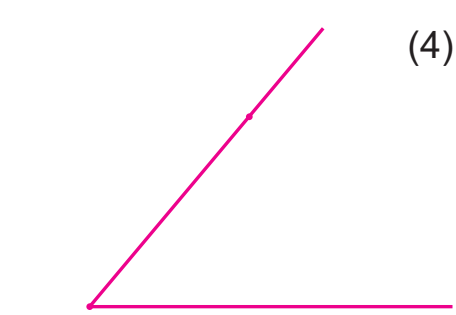
(1)



(2)

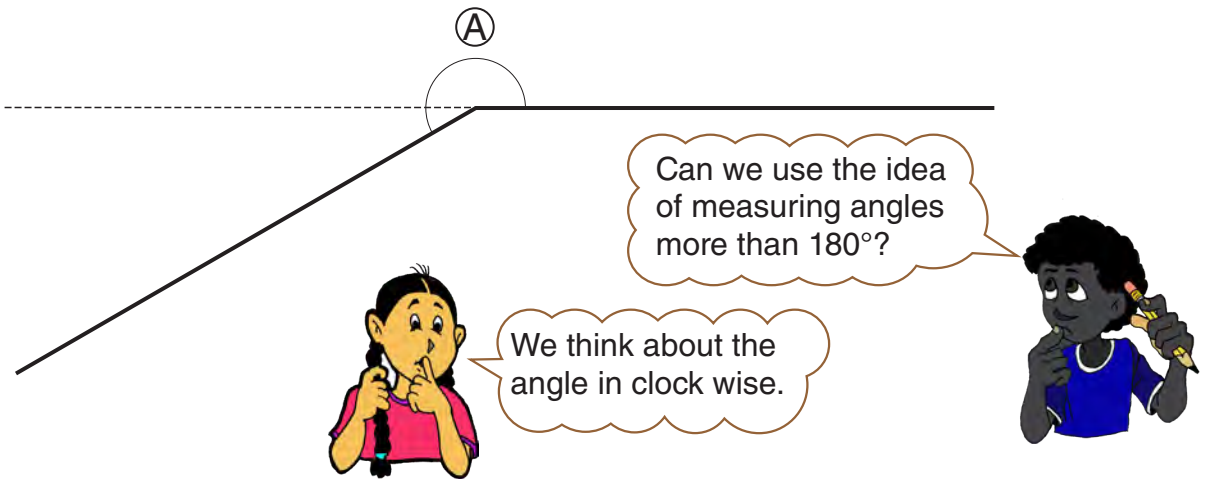


(3)



(4)

8 Let's draw the angle 210° in various way.

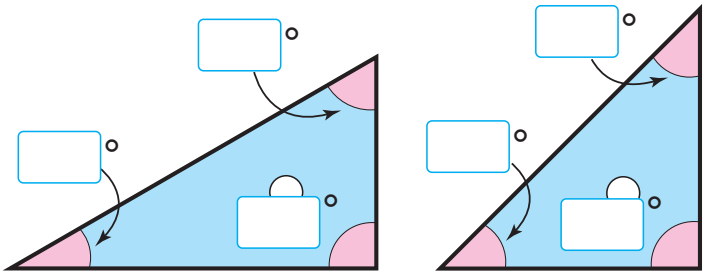


Exercise

Let's draw angles of 35°, 125° and 280°.

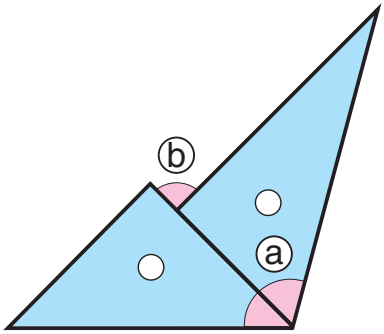
2 The Angles of Triangle Rulers

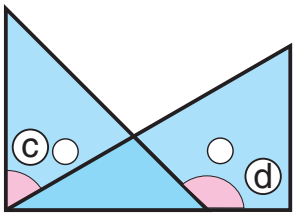
1 Investigate the angles of triangle rulers.

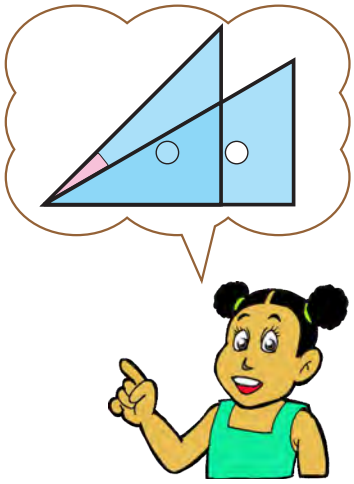


1 Use a protractor to measure the angles of triangle rulers.

2 Two different triangle rulers are used to measure angles as shown below.
Find the angles ⓐ, ⓑ, ⓒ and ⓓ.







3 Use triangle rulers to make new angles.

Experiencing the Angles

Use student and teacher's protractors to find the measurement of different angles of various slopes around you.

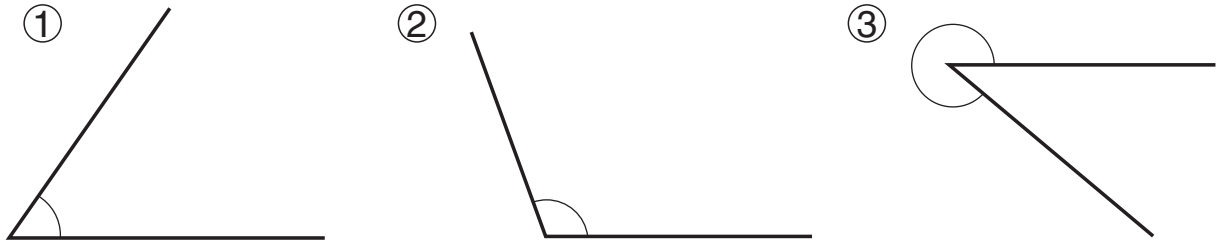
He is using teacher's protractor to measure size of angles.

Exercise

1 Let's measure the following angles.

Pages 30 ~ 33

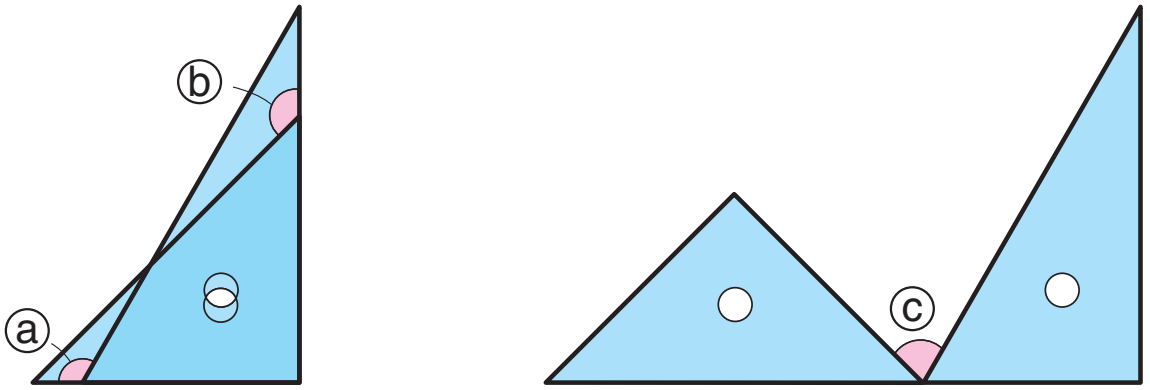
① ② ③



2 Two triangle rulers are used to make angles.

Pages 30 ~ 33

Measure angles ⓐ, ⓑ and ⓒ.



3 Draw an angle of ① and ②.

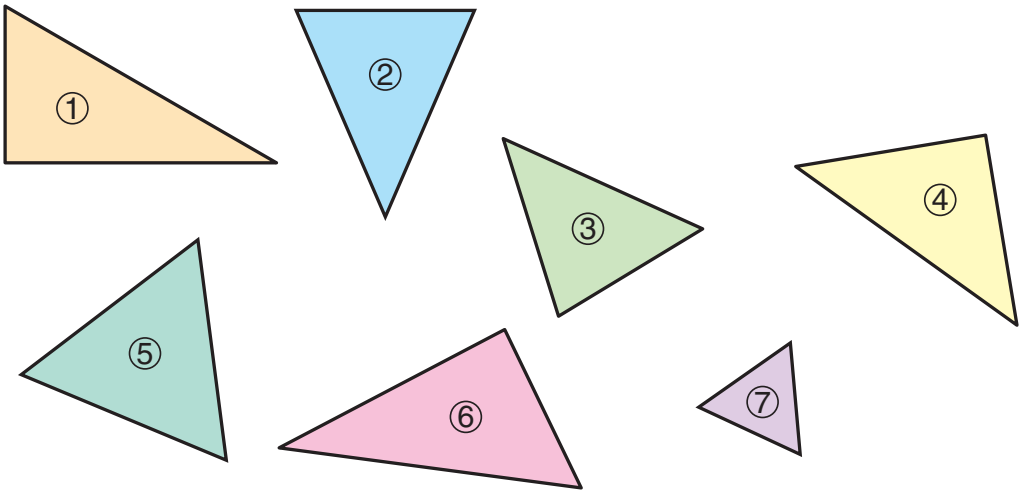
Pages 30 ~ 33

① 120°　　② 300°

Which are the isosceles triangles?

Which are the equilateral triangles?

Grade 3 Do you remember?



Problems

1 Let's summarise what you learned in this chapter.

Fill in the ☐ with the most appropriate word or number.

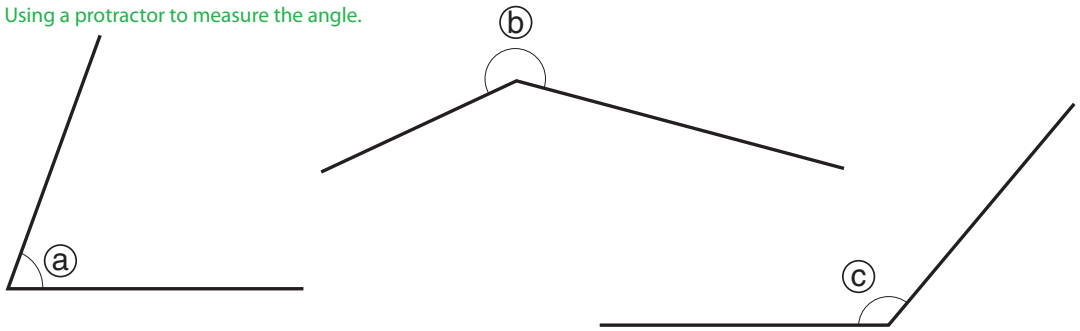
● Understanding the representation of the size of an angle.

The unit ☐ is used to measure the size of an angle.

To make 1°, the angle of one revolution is divided equally into ☐ parts.

2 Let's measure angles ⓐ, ⓑ and ⓒ.

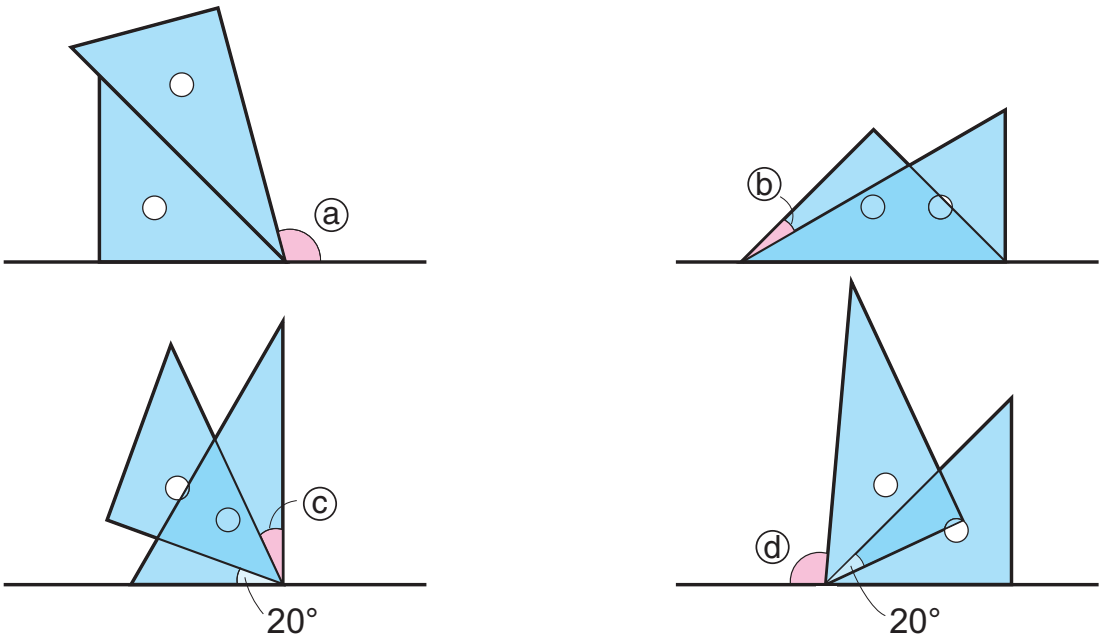
● Using a protractor to measure the angle.



3 Let's draw angles of 100° and 270°.

4 Two triangle rulers are used to form new angles.

Let's get angles ⓐ, ⓑ, ⓒ and ⓓ.



Do you remember?

1 Let's calculate the following division.

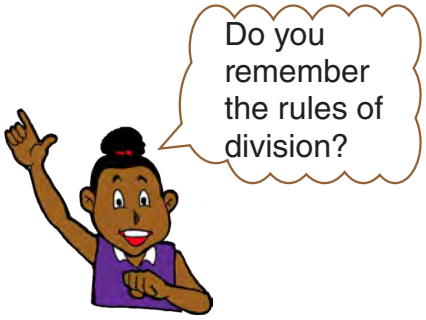
① 24 ÷ 3	② 30 ÷ 5	③ 14 ÷ 2	④ 56 ÷ 7
⑤ 32 ÷ 8	⑥ 16 ÷ 4	⑦ 28 ÷ 7	⑧ 72 ÷ 9
⑨ 14 ÷ 2	⑩ 25 ÷ 5	⑪ 42 ÷ 7	⑫ 28 ÷ 4
⑬ 24 ÷ 6	⑭ 63 ÷ 7	⑮ 64 ÷ 8	⑯ 3 ÷ 1
⑰ 2 ÷ 2	⑱ 0 ÷ 4	⑲ 4 ÷ 1	⑳ 9 ÷ 9
㉑ 16 ÷ 4	㉒ 49 ÷ 7	㉓ 28 ÷ 7	㉔ 54 ÷ 9
㉕ 72 ÷ 8	㉖ 7 ÷ 1	㉗ 3 ÷ 3	㉘ 0 ÷ 6
㉙ 2 ÷ 1	㉚ 5 ÷ 5		

2 Let's calculate and check the answers.

① 28 ÷ 5	② 32 ÷ 6	③ 17 ÷ 4
④ 42 ÷ 8	⑤ 33 ÷ 9	⑥ 54 ÷ 7

3 Let's find the number which applies to the □.

① 3 × □ = 15	② 7 × □ = 63
③ 8 × □ = 24	④ 4 × □ = 28
⑤ □ × 7 = 42	⑥ □ × 6 = 54
⑦ □ × 4 = 24	⑧ □ × 8 = 64



5 Division by 1-digit Numbers

1 Division in Vertical Form

1 We want to divide 48 lollies equally among 9 children. How many lollies will each child receive and how many will remain?

□ ÷ □

Total number of lollies

Number of children

Division Algorithm for 48 ÷ 9 in Vertical Form

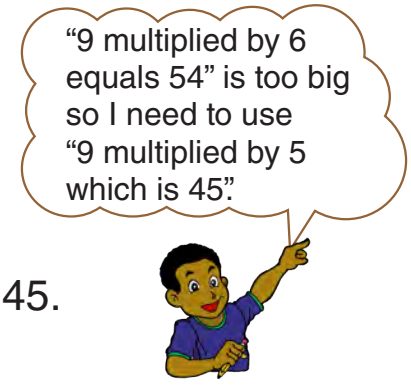
Set up the division as shown on the right.

① Write 5 above the ones place of 48.

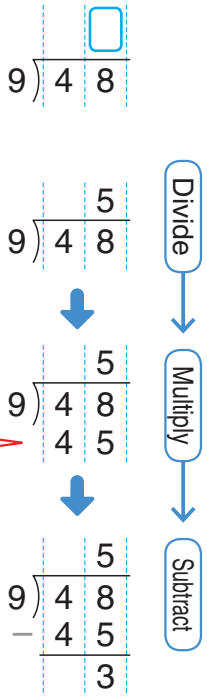
② 9 multiplied by 5 equals 45. Write 45 below 48.

③ Subtract 45 from 48. The remainder is 3.

④ Check that the remainder, 3 is smaller than the divisor 9.

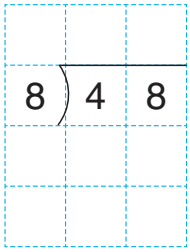


45 is the number of lollies that are given to the children.



Division can be done in vertical form just as with subtraction and multiplication.

2 We want to divide 48 lollies equally among 8 children. How many lollies will each child receive? Let's think about how to calculate the answer in vertical form. Problem like 48 ÷ 8 can also be calculated in vertical form.



The order of writing.

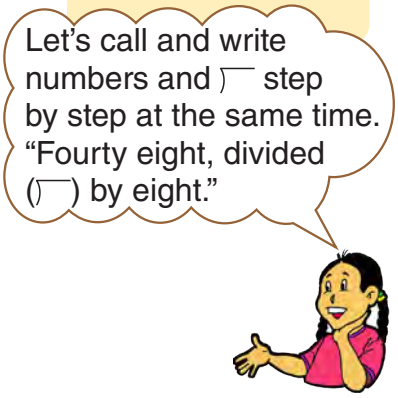
$8\overline{)48}$

(1) 48

(2))48

(3) $\overline{)48}$

(4) $8\overline{)48}$



The answer for divisions with a remainder is a **quotient** and **a remainder**.

48 ÷ 8 = 6 (Dividend, Divisor, Quotient)

48 ÷ 9 ÷ 5 reminder 3 (Dividend, Divisor, Quotient, Remainder)

3 Let's confirm the answers for the following division problems.

48 ÷ 8 = 6

8 × 6 = □ (Divisor, Quotient, Dividend)

48 ÷ 9 = 5 remainder 3

9 × 5 + 3 = □ (Divisor, Quotient, Remainder, Dividend)

Exercise

Let's divide in vertical form and confirm.

① 13 ÷ 2 ② 62 ÷ 7 ③ 32 ÷ 5 ④ 57 ÷ 8 ⑤ 7 ÷ 3

⑥ 21 ÷ 7 ⑦ 30 ÷ 6 ⑧ 54 ÷ 9 ⑨ 36 ÷ 4 ⑩ 8 ÷ 2

2 Division of 2-digit Numbers

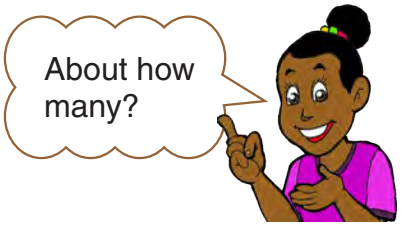
1 We want to divide 69 sheets of coloured papers equally among 3 children. How many sheets of paper will each child receive?

① Write a mathematical expression.

□ ÷ □

Total number of sheets

Number of children



② Let's think about how to find the quotient of 69 ÷ 3 by looking at the drawing on the right.

69 ÷ 3 <

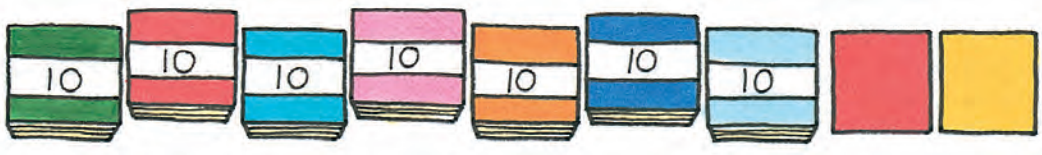
60 ÷ 3 = □

9 ÷ 3 = □

Total □

Tens	Ones
10 10	
10 10	
10 10	

2 We want to divide 72 sheets of papers equally among 3 children. How many sheets of papers will each child receive?



① Write an expression. □ ÷ □

② Let's think about how to calculate.

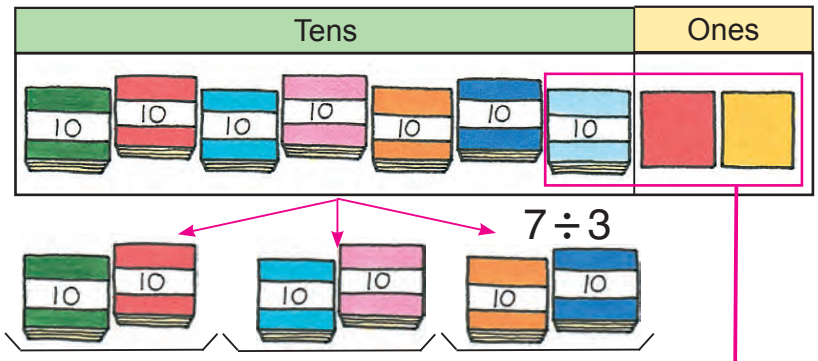
If we divide by 10 sheets of papers, you will get a remainder.

Think about how to calculate divisions where the quotient is a 2-digit number.

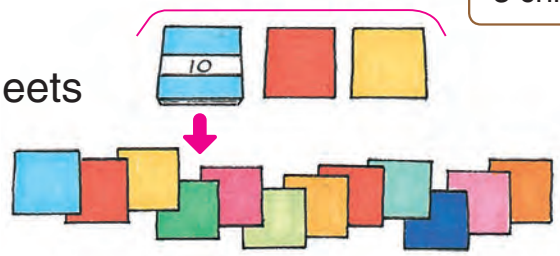
Activity

How to Find the Answer for 72 ÷ 3

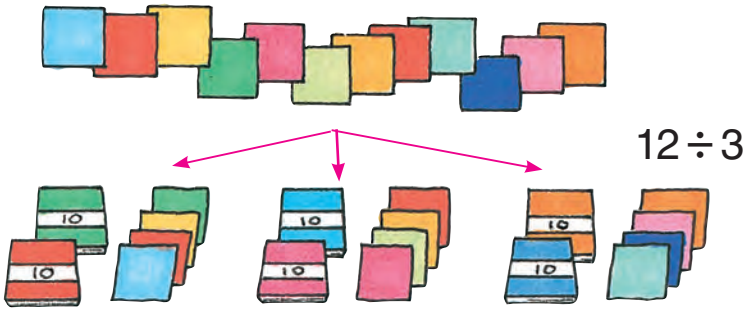
① We are going to divide 7 packs of 10 sheets of paper among 3 children. How many packs will each child receive and what is the remainder?



② We split the remaining 1 pack into 10 single sheets of paper and add them to the 2 single sheets.



③ We divide 12 single sheets among 3 children.



④ How many sheets of paper will each child receive?

Packs of 10 .....7 ÷ 3 = 2 remainder 1

Singles ..... 12 ÷ 3 = 4

72 ÷ 3 < 60 ÷ 3 = ☐
12 ÷ 3 = ☐
Total ☐

Division Algorithm for 72÷3 in Vertical Form

Tens place

The tens place

$7 \div 3 = 2$ remainder 1, write 2 in the tens place.

Divide

$3 \times 2 = 6$

6 means 6 stacks of 10 sheets are used to divide the 7 stacks.

Multiply

$7 - 6 = 1$

The remainder must be smaller than the divisor.

Subtract

Bring down the 2 in the ones place.

Bring down

Ones place

The ones place

$12 \div 3 = 4$ Write 4 in the ones place.

Divide

$3 \times 4 = 12$

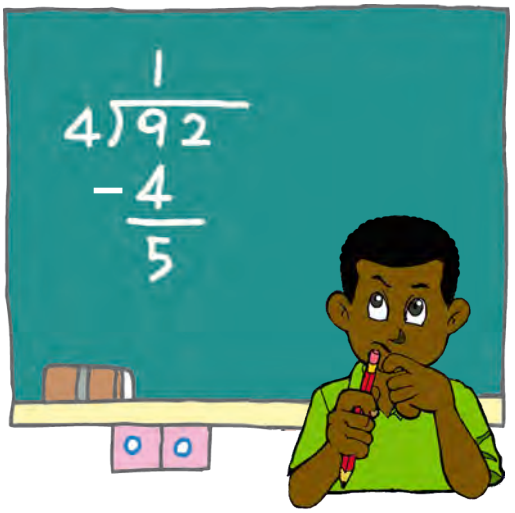
12 means we have distributed 12 single sheets.

Multiply

$12 - 12 = 0$

Subtract

3 The boy below is dividing $92 \div 4$ in vertical form. What is his mistake? Correct the mistake and finish the problem.



When doing division in vertical form start from the highest place value. Subtraction is part of the calculation in vertical division, so we do not always write the subtraction sign.

Exercise

Let's divide in vertical form.

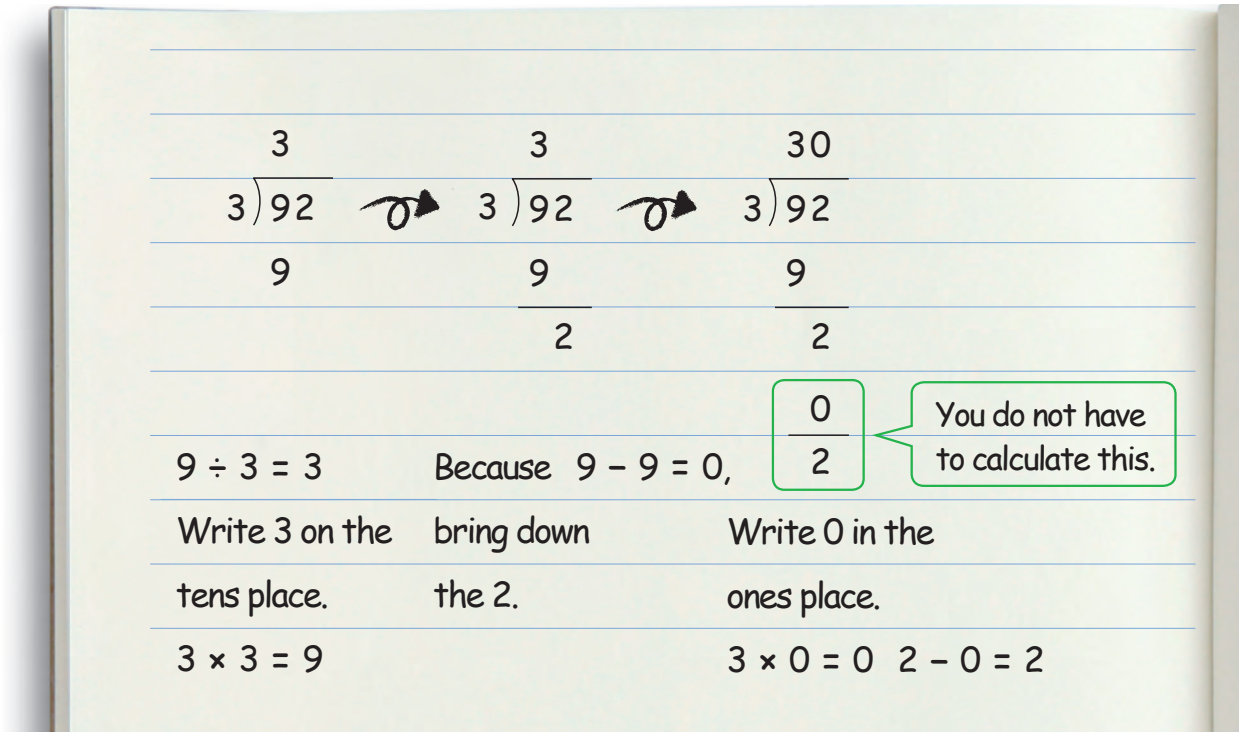
① $54 \div 2$ ② $68 \div 4$

③ $34 \div 2$ ④ $84 \div 3$

4 Let's explain how to divide in vertical form.

$$\begin{array}{r} 24 \\ 3\overline{)74} \\ -\ 6 \\ \hline 14 \\ -\ 12 \\ \hline 2 \end{array} \qquad \begin{array}{r} 34 \\ 2\overline{)69} \\ -\ 6 \\ \hline 9 \\ -\ 8 \\ \hline 1 \end{array}$$

5 Let's write and explain how to divide 92 ÷ 3 in vertical form in your exercise book.



Activity

Exercise

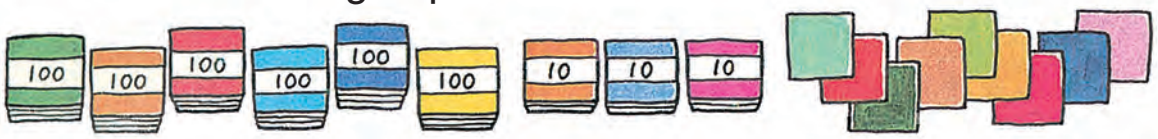
1 Let's divide in vertical form.

① 85 ÷ 7	② 94 ÷ 4	③ 86 ÷ 3	④ 75 ÷ 6
⑤ 68 ÷ 3	⑥ 45 ÷ 2	⑦ 85 ÷ 4	⑧ 56 ÷ 5
⑨ 54 ÷ 5	⑩ 82 ÷ 4	⑪ 61 ÷ 2	⑫ 42 ÷ 4

2 6 children went to gather shells.
They found 90 shells.
If they divide them equally, how many shells will each child receive?

3 The Calculation of (3-digit Numbers) ÷ (1-digit Number)

1 There are 639 sheets of coloured paper. If the papers are divided equally into 3 groups, how many sheets of paper will be there in each group?



1. Write a mathematical expression. ☐

2. About how many sheets of paper are there in each group?

3. Let's think about how to calculate.

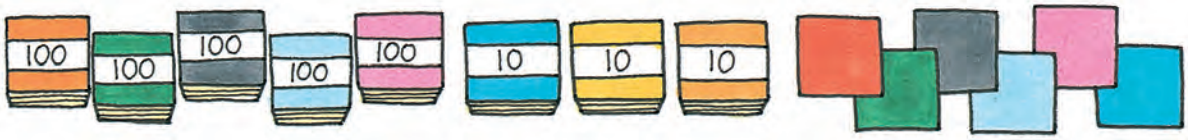
639 ÷ 3

- 600 ÷ 3 = ☐
- 30 ÷ 3 = ☐
- 9 ÷ 3 = ☐

Total ☐

2 There are 536 sheets of paper. The sheets are divided equally among 4 children. How many sheets of paper will each child receive? Let's think about how to calculate the answer.

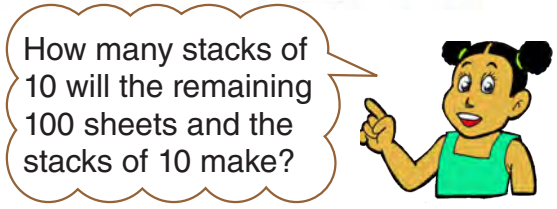
536 ÷ 4



1. Let's divide into stacks of 100.

   5 ÷ 4 = ☐ Remainder ☐

   Number of stacks



2. Divide the stacks of 10. ☐ ÷ 4 = ☐ Remainder ☐

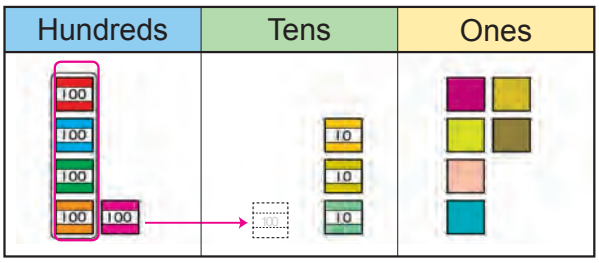
3. Divide the single sheets. ☐ ÷ 4 = ☐

4. How many sheets of paper will each child receive?

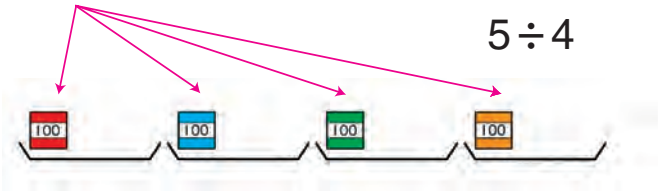
   536 ÷ 4 = ☐

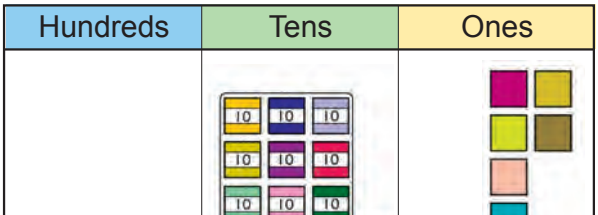
5. Think about how to find the answer in vertical form.

Division Algorithm for 536 ÷ 4 in Vertical Form

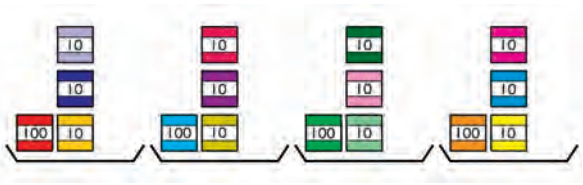


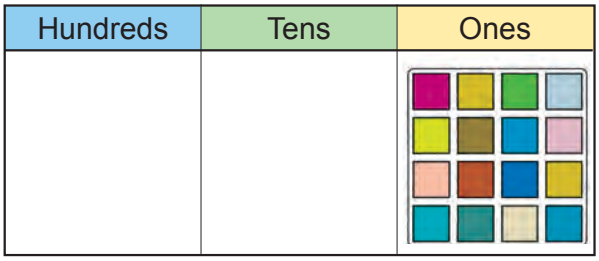
5 ÷ 4



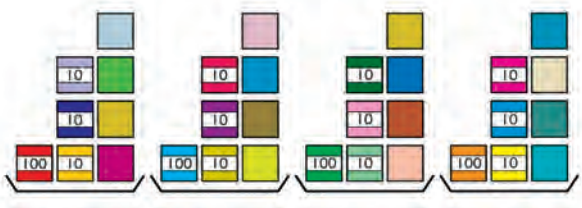


13 ÷ 4





16 ÷ 4



$4 \overline{)\,5\;3\;6}$

From which place did we begin to divide?

Hundreds place

$$\begin{array}{r} 1 \\ 4 \overline{)\,5} \\ -\,4 \\ \hline 1 \end{array}$$

Divide the number of stacks of 100.

$4 \overline{)\,5}$

Tens place

$$\begin{array}{r} 1\;3 \\ 4 \overline{)\,5\;3} \\ -\,4 \\ \hline 1\;3 \\ -\,1\;2 \\ \hline 1 \end{array}$$

Divide the number of stacks of 10.

$4 \overline{)\,1\;3}$

Ones place

$$\begin{array}{r} 1\;3\;4 \\ 4 \overline{)\,5\;3\;6} \\ -\,4 \\ \hline 1\;3 \\ -\,1\;2 \\ \hline 1\;6 \\ -\,1\;6 \\ \hline 0 \end{array}$$

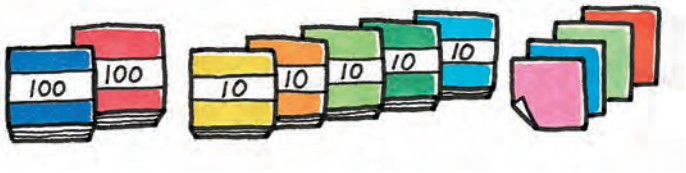
Divide the number of single sheets of coloured paper.

$4 \overline{)\,1\;6}$

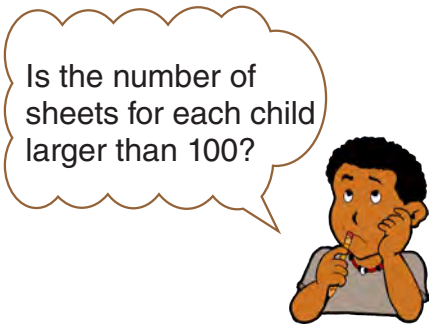
3 Let's divide in vertical form.

1. 482 ÷ 2
2. 264 ÷ 2
3. 936 ÷ 3
4. 848 ÷ 4
5. 628 ÷ 4
6. 861 ÷ 7
7. 725 ÷ 5
8. 867 ÷ 3

4 There are 254 sheets of coloured paper. If they are divided equally among 3 children, how many sheets will each child receive and what is the remainder?

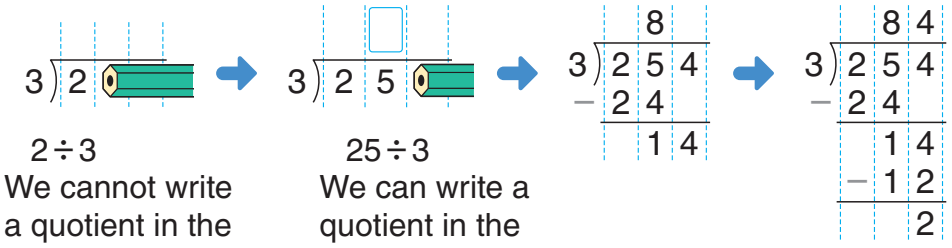


254 ÷ 3



1. Can they divide the paper without opening the bundles of 100?
2. Think about this problem by changing the two stacks of 100 into stacks of 10. 254 is 25 sets of 10 and 4 sets of 1.

Division Algorithm for 254 ÷ 3 in Vertical Form



2 ÷ 3
We cannot write a quotient in the hundreds place.

25 ÷ 3
We can write a quotient in the tens place.

If the quotient is smaller than 100, we begin by writing a number in the tens place.

Exercise

① 316 ÷ 4 ② 552 ÷ 6 ③ 173 ÷ 2 ④ 581 ÷ 9

5 The answers of these 2 division problems were calculated as follows.

Ⓐ $420 \div 3$

ⓐ
$$\begin{array}{r} 140 \\ 3\overline{)420} \\ 3 \\ \hline 12 \\ 12 \\ \hline 0 \\ 0 \\ \hline 0 \end{array}$$

ⓑ
$$\begin{array}{r} 140 \\ 3\overline{)420} \\ 3 \\ \hline 12 \\ 12 \\ \hline 0 \end{array}$$

Ⓑ $859 \div 8$

ⓐ
$$\begin{array}{r} 107 \\ 8\overline{)859} \\ 8 \\ \hline 5 \\ 0 \\ \hline 59 \\ 56 \\ \hline 3 \end{array}$$

ⓑ
$$\begin{array}{r} 107 \\ 8\overline{)859} \\ 8 \\ \hline 59 \\ 56 \\ \hline 3 \end{array}$$

1. How to find the answers in vertical form.
2. Check the answers as follows.

(Divisor × Quotient) + (Remainder) = (Dividend)

I know.. if $6 \div 3 = 2$, I make $2 \times 3 = 6$ to confirm the answer.

Ok..If $7 \div 3 = 2$ r 1, I confirm...$2 \times 3 + 1 = 7$. Same as Divisor × Quotient + remainder!

Exercise

① $740 \div 2$ ② $650 \div 5$ ③ $840 \div 6$ ④ $810 \div 3$

⑤ $742 \div 7$ ⑥ $618 \div 3$ ⑦ $958 \div 9$ ⑧ $825 \div 4$

Mental Arithmetic

Let's solve $72 \div 4$ mentally.

How can we find the answer in the tens place?

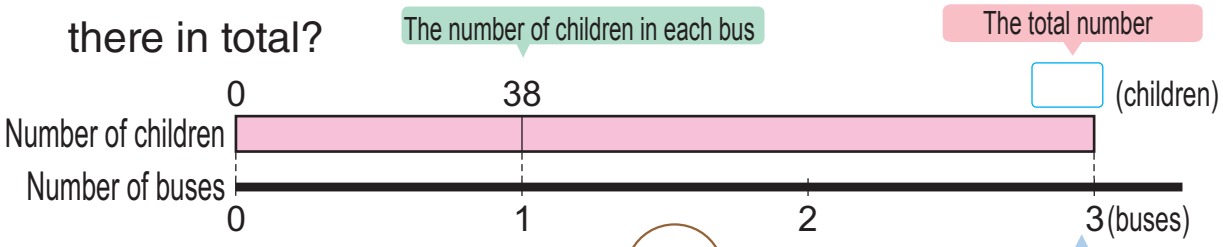
To do $7 \div 4$, try "4 multiplied by 2 equals 8", "4 multiplied by 1 equals 4" so…

4 multiplied by 1 equals 4.....by 8 equals 32

$72 \div 4$ ⟨ $40 \div 4 \longrightarrow 40 = 4 \times 10 \rightarrow 10$; $32 \div 4 \longrightarrow 32 = 4 \times 8 \rightarrow 8$ ⟩ → Total ☐

4 What Kind of Expression?

1 The fourth grade children went for a field trip in 3 buses. There were 38 children on each bus. How many children were there in total?

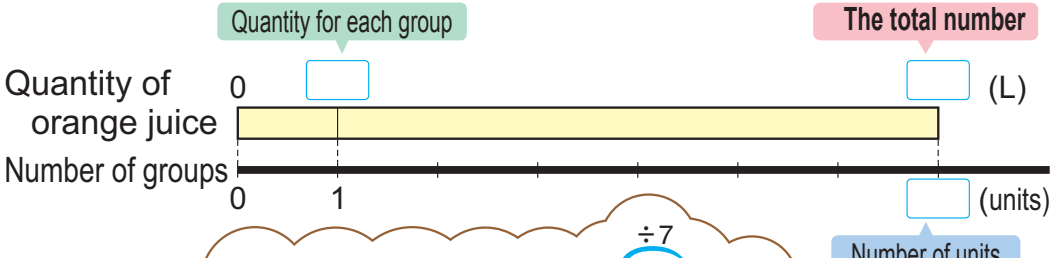


Number of children (children)	38	?
Number of buses (buses)	1	3

×3 ×3

2 There is 56 dL of orange juice. The juice is divided among 7 groups. How much will each group receive?

1. What is known?
2. What do you want to know?
3. Write what is known in the diagram and find the answer.



Quantity of orange juice (Q)	?	56
Number of groups (units)	1	7

÷7 ÷7

3 48 boys are participating in a competition. If each group has 4 boys, how many groups are there?

1. What is known? What do you want to know?
2. Write what is known in the diagram and find the answer.

Exercise

1 Let's calculate.

Pages 37 ~ 42

① 78 ÷ 3 ② 96 ÷ 8 ③ 38 ÷ 2 ④ 55 ÷ 5

⑤ 48 ÷ 4 ⑥ 77 ÷ 6 ⑦ 56 ÷ 3 ⑧ 90 ÷ 7

⑨ 83 ÷ 2 ⑩ 65 ÷ 3 ⑪ 98 ÷ 9 ⑫ 81 ÷ 4

2 Let's calculate.

Pages 43 ~ 46

① 548 ÷ 4 ② 259 ÷ 7 ③ 624 ÷ 3 ④ 367 ÷ 9

⑤ 457 ÷ 6 ⑥ 543 ÷ 5 ⑦ 963 ÷ 8 ⑧ 728 ÷ 6

3 Salomie and her 5 friends are going to fold 360 paper flowers. If everybody folds the same number of paper flowers, how many paper flowers will each child make?

Page 47

4 There are 436 pencils as prizes for a school competition. The pencils are divided into sets of 3. How many sets of pencils are there? How many more pencils are needed to make 150 sets.

Page 47

5 You are making a square using a 64 cm string. How long is one side?

Page 47

Problems

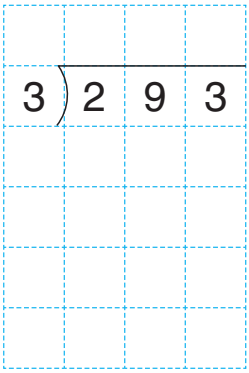
1 Let's think about how to divide 293 ÷ 3 in vertical form.

● Understanding how to calculate in vertical form.

① The first place of the quotient is the ☐.

② The remainder of 2 in the tens place means 2 sets of ☐.

③ The calculation in the ones place is ☐ ÷ 3.



2 Let's divide in vertical form.

● Understanding how to calculate (2-digit) ÷ (1-digit) and (3-digit) ÷ (1-digit) in vertical form.

① 34 ÷ 4	② 50 ÷ 6	③ 72 ÷ 5	④ 86 ÷ 2
⑤ 59 ÷ 4	⑥ 70 ÷ 5	⑦ 97 ÷ 6	⑧ 67 ÷ 3
⑨ 174 ÷ 6	⑩ 759 ÷ 4	⑪ 589 ÷ 7	⑫ 177 ÷ 3
⑬ 828 ÷ 3	⑭ 240 ÷ 5	⑮ 914 ÷ 7	⑯ 528 ÷ 5

3 There are 125 children who must race in groups of 6.

● Understanding how to make expression and the meaning of remainders.

① How many groups of 6 are there?

② If they make a group with the remainder, how many children are there in that group?

4 Find all whole numbers in which the quotient will be 8 when divided by 6.

● Understanding the relationship between divisor, dividend and remainder.

1 Read the problems below and answer questions ① and ②.

● Getting expression from the problem.

Ⓐ You will use 8 of 160 cm tapes. How many cm of tapes do you need?
Ⓑ You divided some papers to children. You gave out 160 papers, and had 8 left. How many papers were in the beginning?
Ⓒ You have 160 lollies. If you gave 8 lollies to each person, how many people can receive the lollies?
Ⓓ An older brother has 160 cards. He gave 8 cards to his younger brother. How many are left?
Ⓔ There are 8 children. They picked up 160 shells. If they divided the shells equally among 8 children, how many will each child get?
Ⓕ Mother is 160 cm tall. The older sister of the family is 8 cm shorter than her mother. How tall is the older sister?
Ⓖ An iron roof costs 160 kina per 8 m. How much does 1 m of this iron roof cost?
Ⓗ There are 160 children. If you give out 8 candies to each child, how many candies do you need?

① Which problems give the expression 160 ÷ 8?

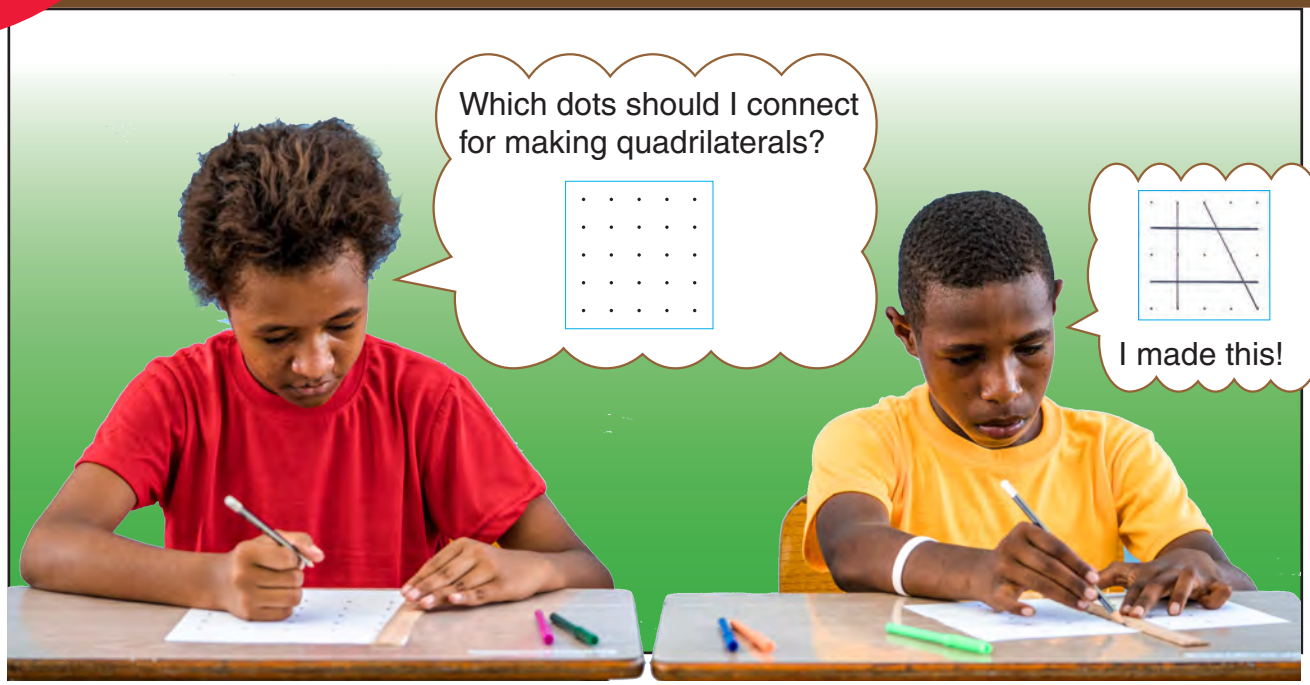
② Which problem gives the expression 160 × 8?

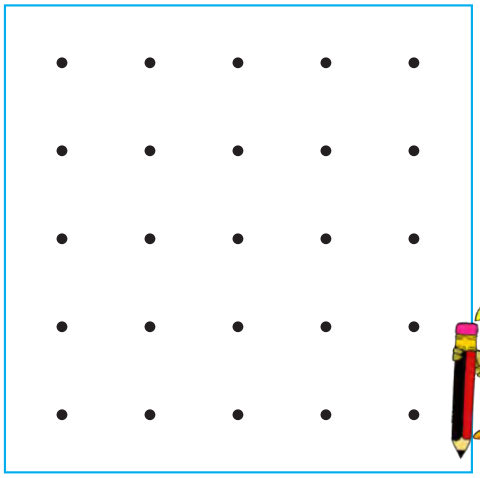
2 Let's make a problem which becomes the following expressions.

● Posing a mathematics problem from expressions.

① 450 ÷ 9　　② 450 × 9

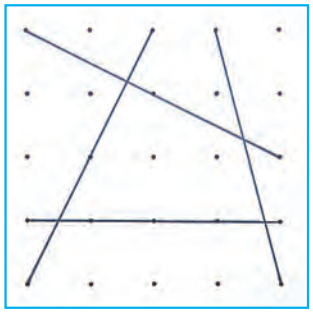
6 Quadrilaterals

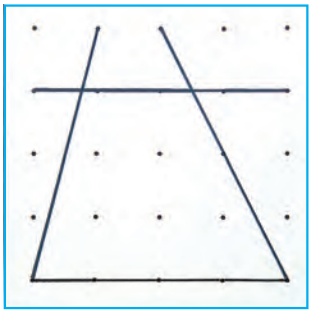


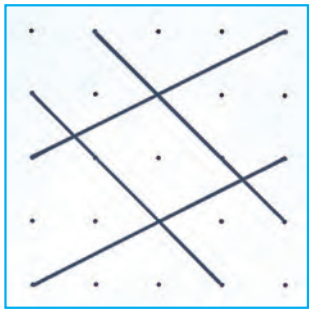


On the dotted paper like the one on the left, make various quadrilaterals by joining the dots with four lines.

Making various quadrilaterals using these dots.



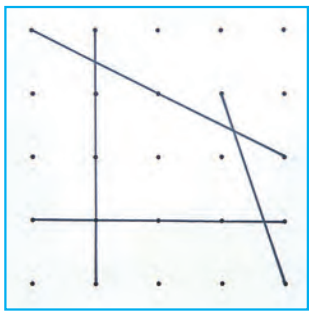




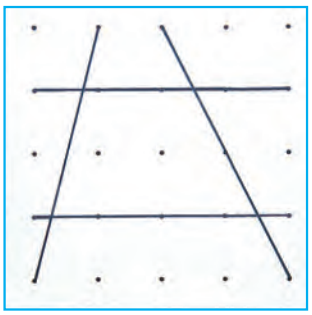
Let's categorise the shapes you made.

Activity

Ⓐ



Ⓑ



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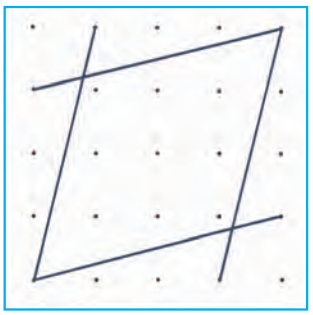

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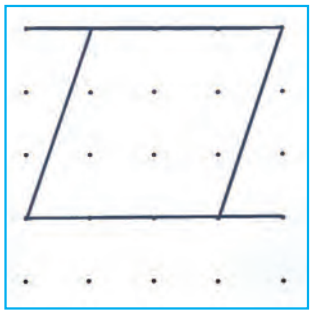

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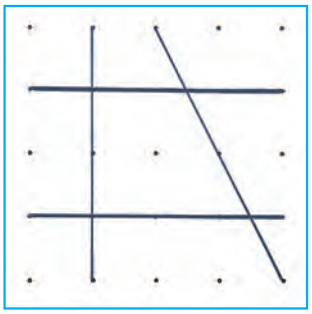

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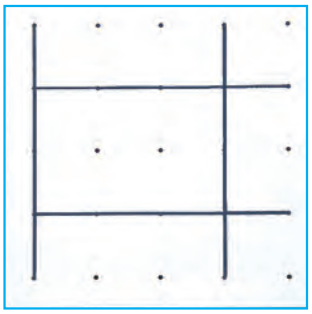

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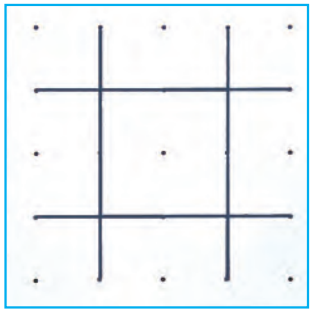

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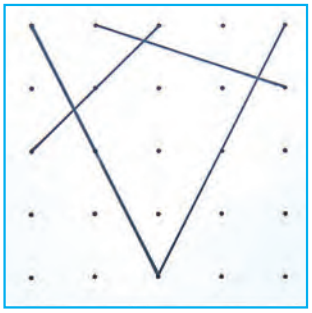

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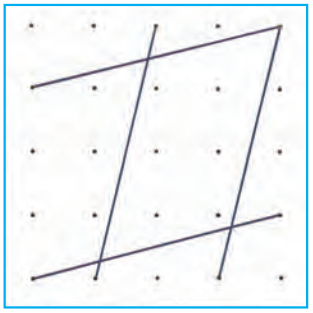

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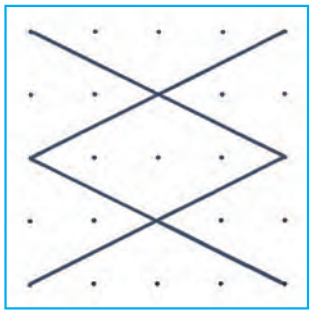

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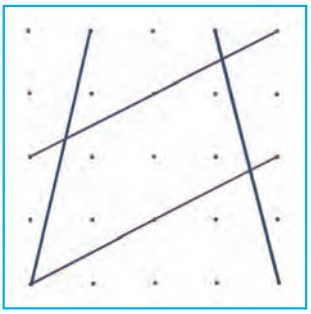

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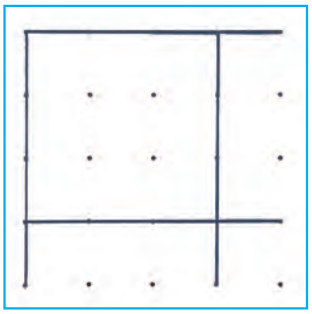
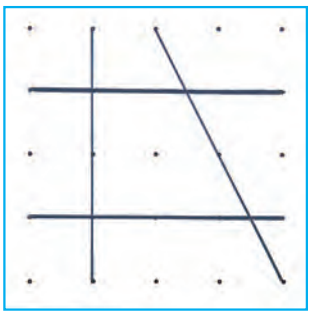


Let's consider the names, ways to draw and the characteristics of various quadrilaterals.

1 Perpendicular Lines

1 Let's explore quadrilateral Ⓔ on page 52.

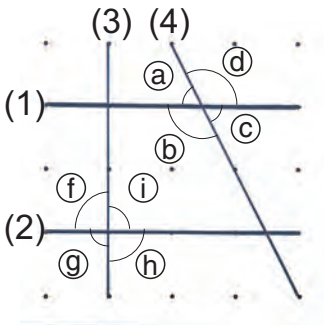
Ⓔ

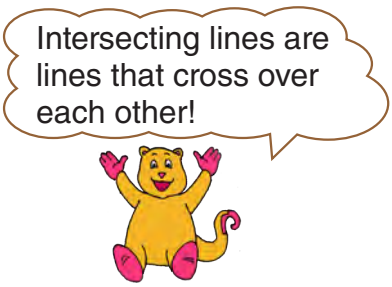


1. At what angle do the two lines (1) and (4) intersect?

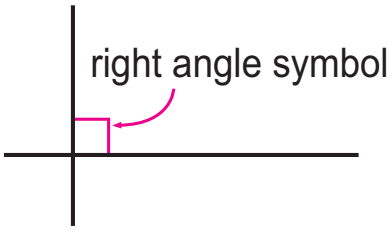
   Measure angles ⓐ, ⓑ, ⓒ and ⓓ.

2. At what angle do the two lines (2) and (3) intersect?



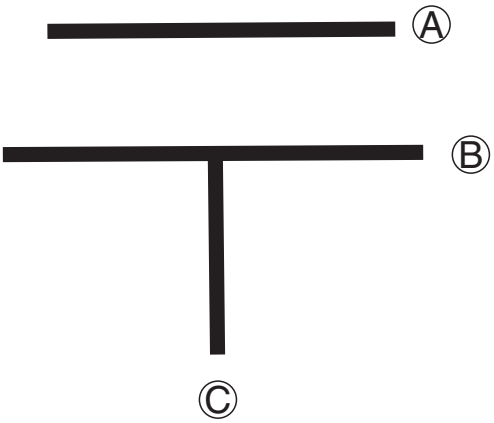


Two lines are **perpendicular**, if they intersect at a right angle. **Perpendicular** lines meet at right angle.



The two lines (2) and (3) are perpendicular.

2 The diagram on the right shows three lines Ⓐ, Ⓑ and Ⓒ.

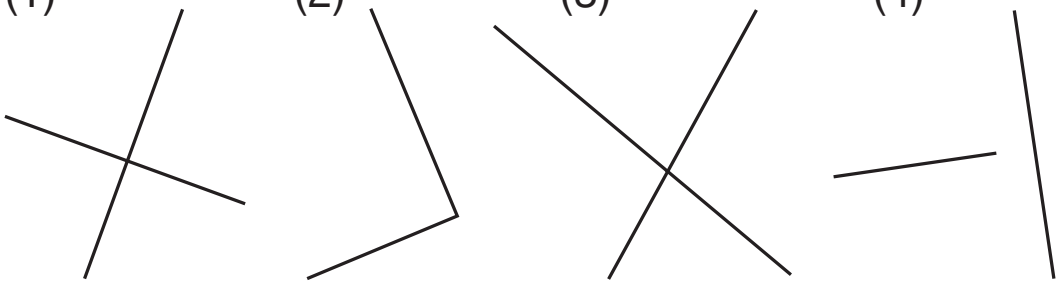


1. If line Ⓑ and Ⓒ intersect at a right angle, what are they called?
2. If you extend the line Ⓒ to Ⓐ, line Ⓒ and Ⓐ are ☐.

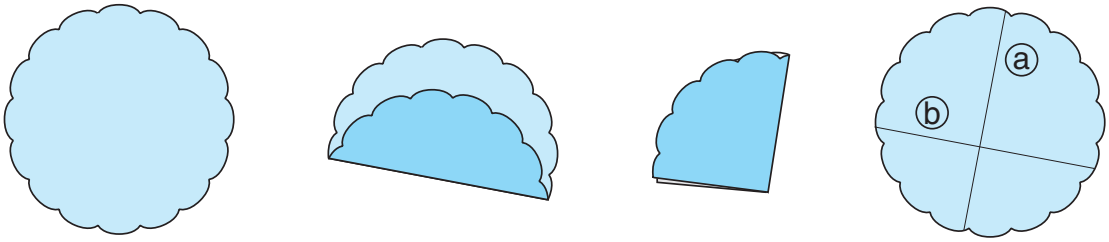
If the extended line of one line intersects perpendicularly with the other line, even if we cannot see the intersection point itself, the two lines are perpendicular.

3 Which lines are perpendicular?

(1) (2) (3) (4)



4 Let's fold a paper to make perpendicular lines.

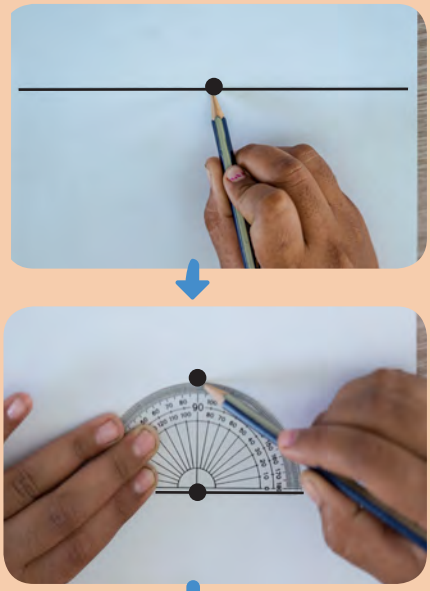


Let's Find Perpendicular Lines

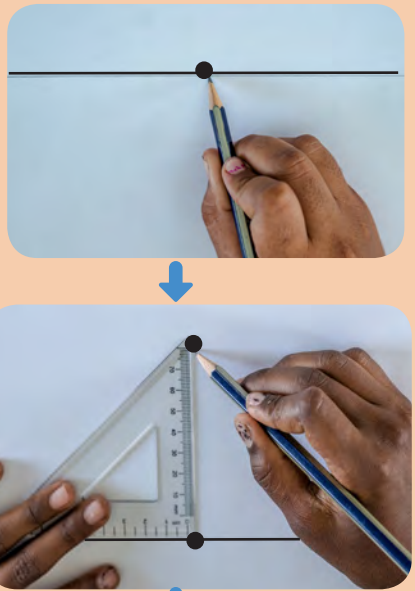
Using the folded paper in **4**, right angle of exercise books and triangular rulers, let's find perpendicular lines around us.

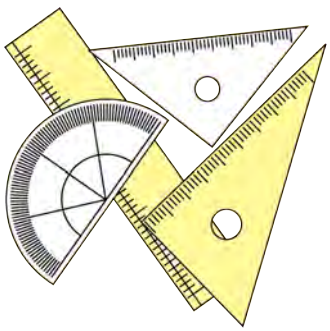
5 Let's explore how to draw a perpendicular line.

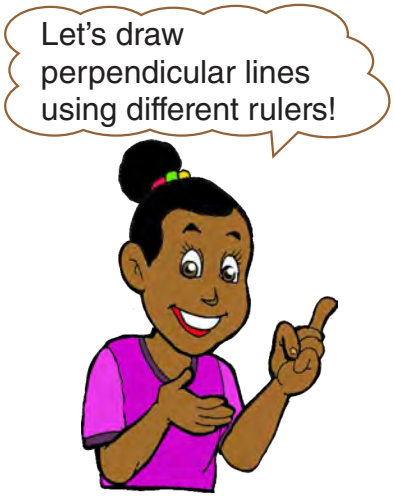
Gawi's idea



Ambai's idea

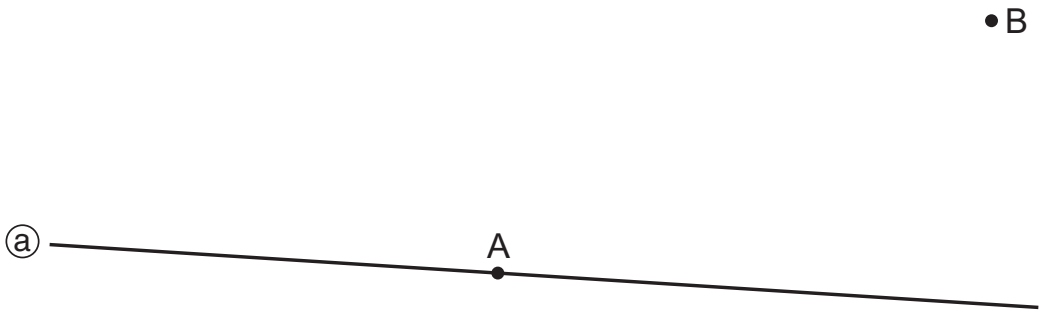






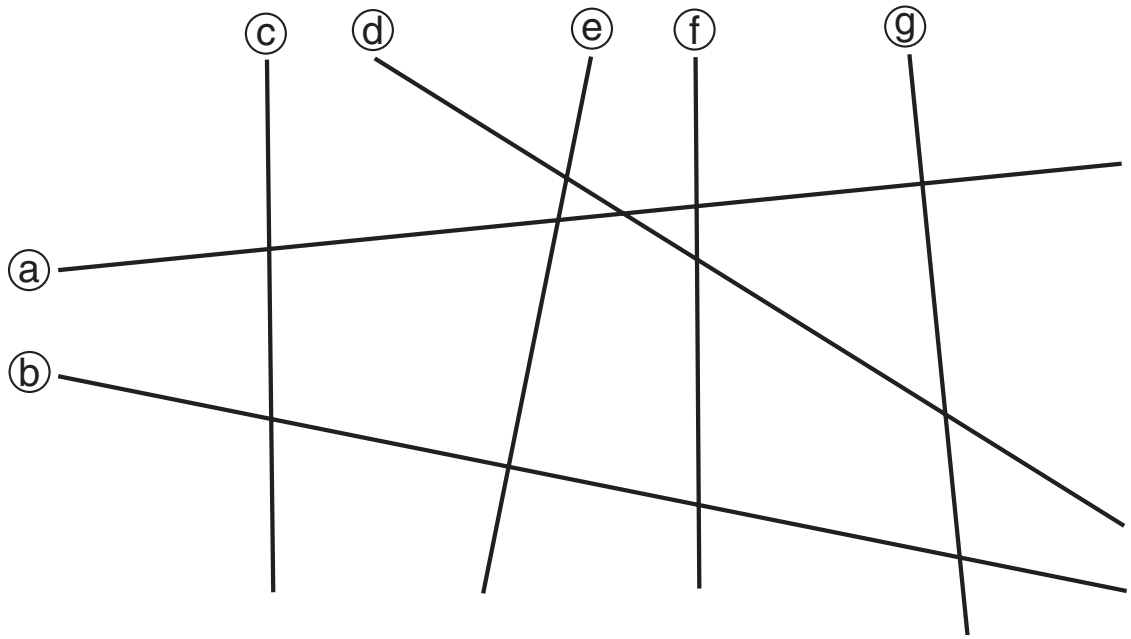
6 Draw a line that is:

1. Perpendicular to line ⓐ and passes through point A.
2. Perpendicular to line ⓐ and passes through point B.



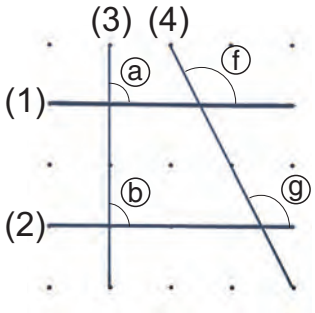
Exercise

Which lines are perpendicular?



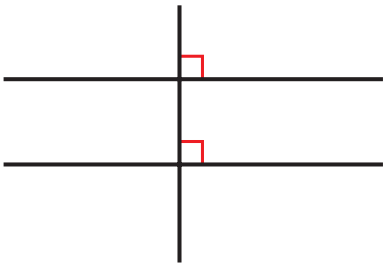
2 Parallel Lines

1 Let's explore quadrilateral Ⓔ on page 52.



1 What is the relationship of line (1), (2) and (3) when they intersect?

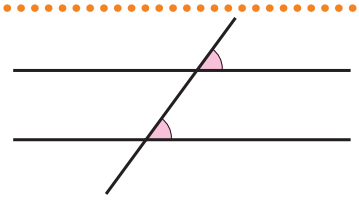
Two lines are **parallel** when a third line crosses both lines at right angles.



2 The lines (1) and (2) are parallel lines.

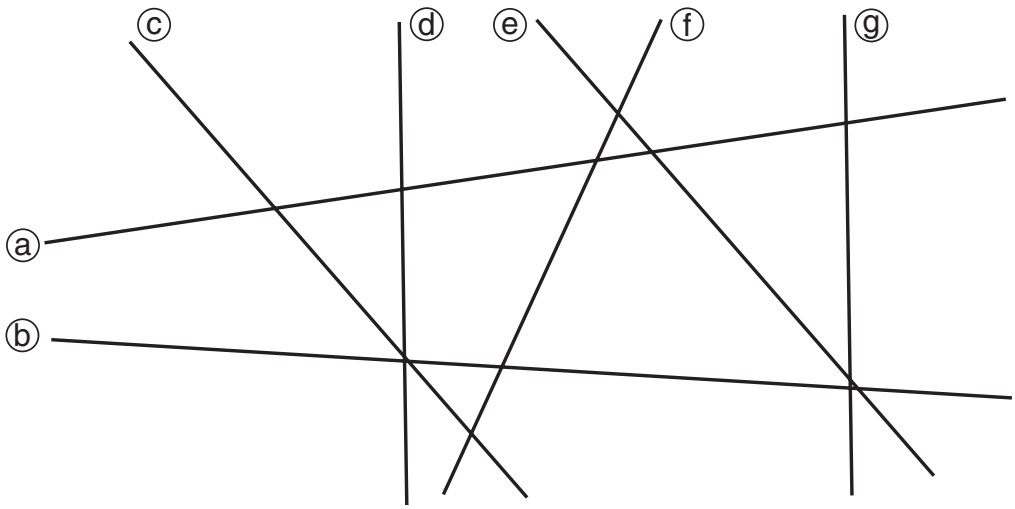
Let's measure angles ⓕ and ⓖ and compare.

Two lines which are intersected by a line at the same angles are parallel.



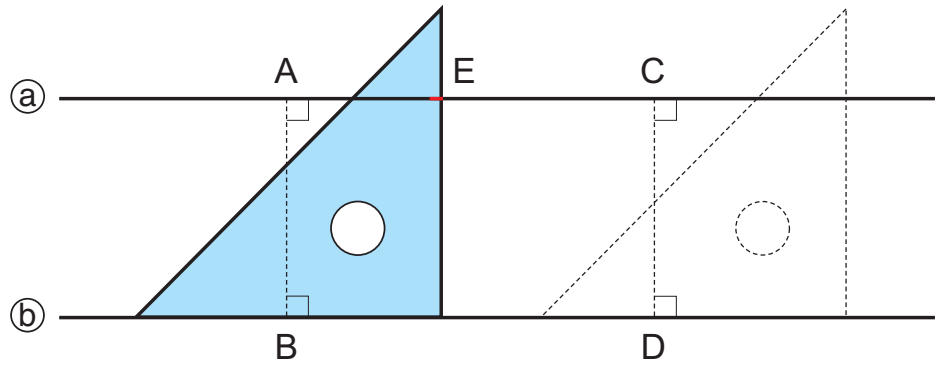
Exercise

Let's choose parallel lines.



2 In the diagram below, line ⓐ and ⓑ are parallel.

Let's consider the following.



1. Compare distances of AB and CD.
2. If you extend lines ⓐ and ⓑ, will they intersect?
3. When you place a triangle ruler on line ⓑ, it intersects line ⓐ at E. If you slide the ruler on line ⓑ, what will happen with point E?

The distance between 2 parallel lines is equal at every point and they never cross no matter how far they are extended.

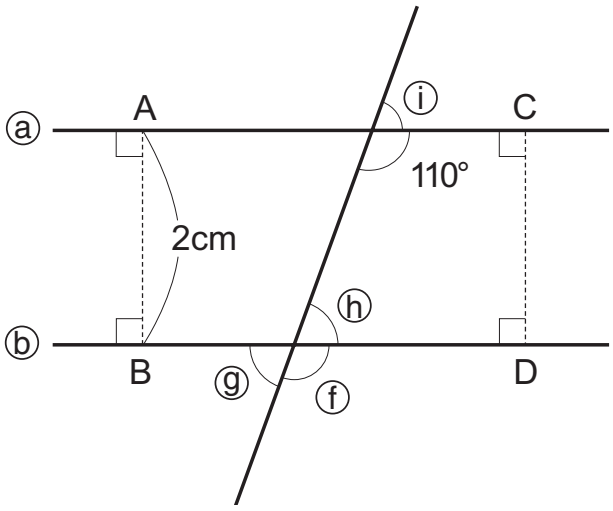
3 Let's find pairs of parallel lines from the quadrilaterals on page 52.

Exercise

Line ⓐ and ⓑ are parallel.

Find the sizes of angle ⓕ, ⓖ, ⓗ and ⓘ.

Find the length of line CD.



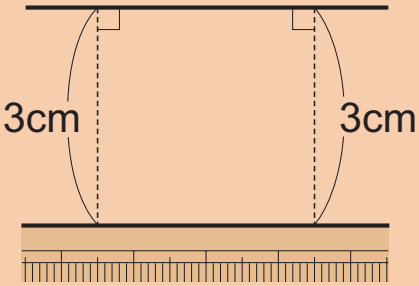
4 Let's explore how to draw parallel lines.

Read Mero and Vavi's methods and explain the reason why their methods are appropriate.

ⓐ ———————————————————

Mero's idea

Vavi's idea



5 Let's draw parallel lines.

1. ⓐ and ⓑ which are 2 cm apart
2. ⓒ and ⓓ which are 4 cm apart

Exercise

Let's draw lines with the following conditions.

① Draw a line which passes points A and parallel to line ⓐ.

② Draw two lines that are parallel to ⓐ and 2 cm apart.

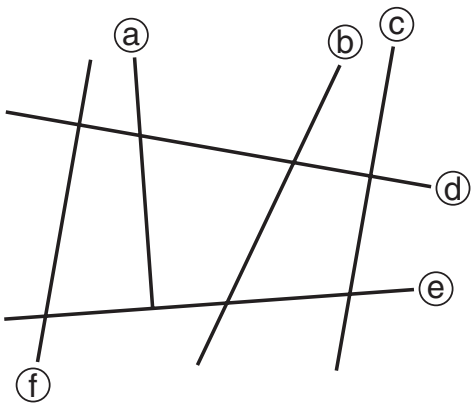
A •

ⓐ ———————————————————

Exercise

1 Which lines are perpendicular?

Pages 53 ~ 56

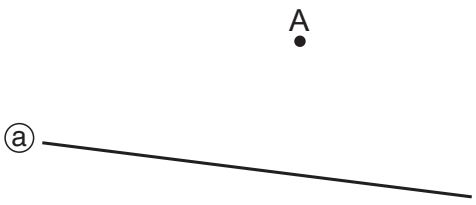


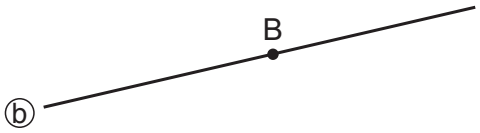
2 Let's draw lines with the following conditions.

Pages 53 ~ 56

① Passing through point A and perpendicular to line ⓐ.

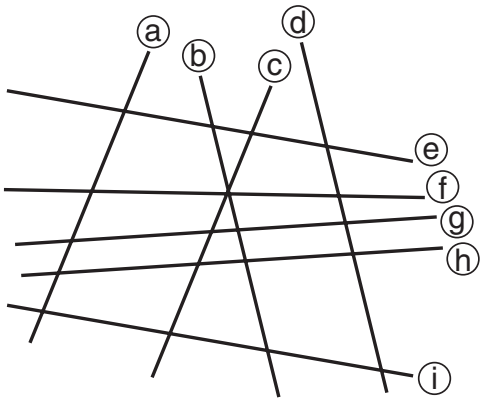
② Passing through point B and perpendicular to line ⓑ.





3 Let's identify parallel lines.

Pages 57 ~ 59

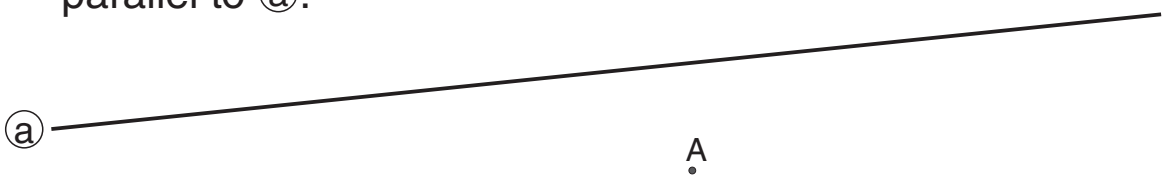


4 Draw the following lines.

Pages 58 ~ 59

① The line that goes through point A and is parallel to line ⓐ.

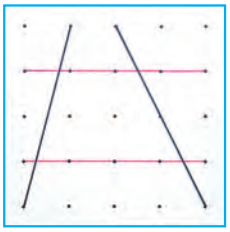
② The lines ⓒ and ⓓ that are 1 cm each from line ⓐ and parallel to ⓐ.

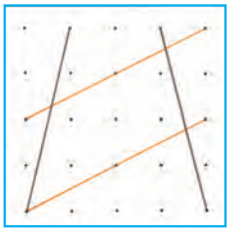


3 Various Quadrilaterals

Let's draw parallel lines in the quadrilaterals with the same colour on page 52.

Let's categorise them.

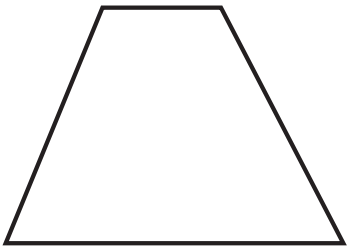


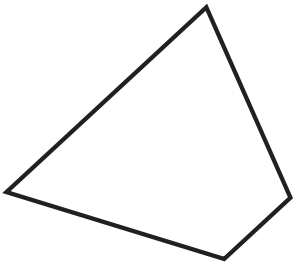


Trapezoid

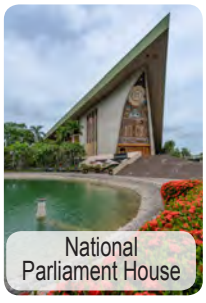
1 Which quadrilaterals on page 52 have one pair of parallel lines?

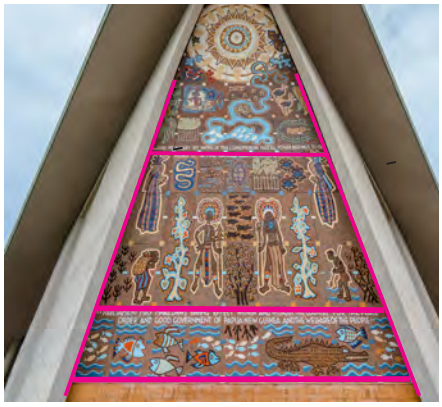
A quadrilateral that has one pair of parallel sides is called **trapezoid**.



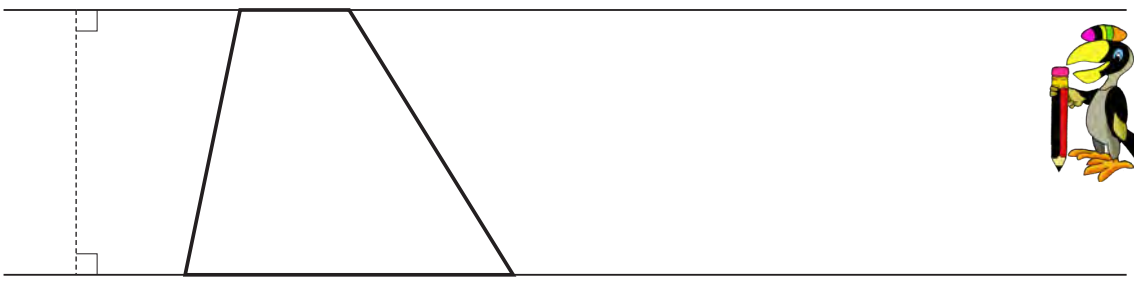


2 Let's look for trapezoids in our surroundings.



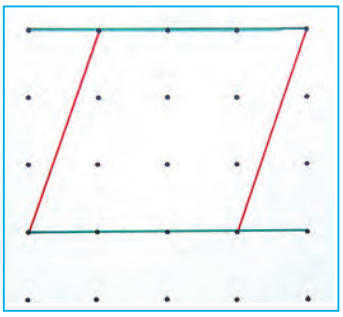


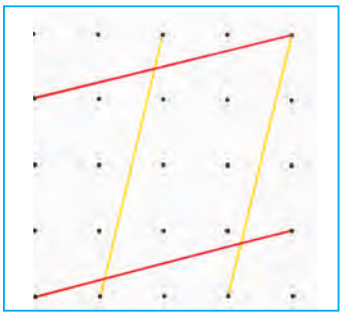
3 Let's use a pair of parallel lines to draw a trapezoid.



Activity

Parallelograms





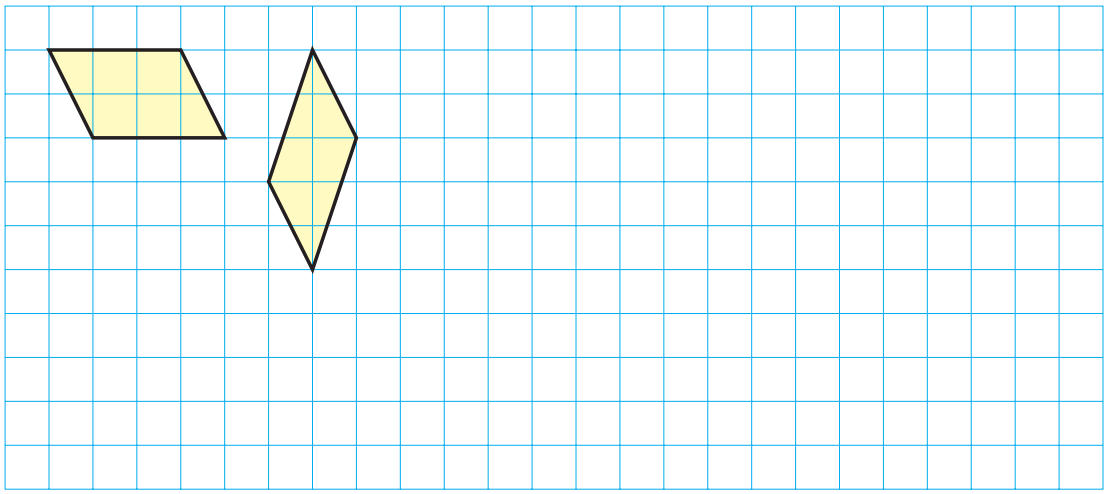
4 Which quadrilaterals on page 52 have two pairs of parallel lines?

A quadrilateral with two pairs of parallel sides is called **parallelogram.**

5 Let's look for parallelograms in our surroundings.

Exercise

Let's use a grid paper to draw parallelograms.



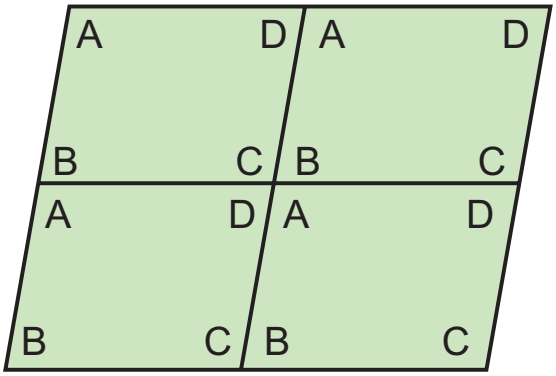
Activity

6 Let's use a triangle ruler to draw various shapes of parallelograms in your exercise books.

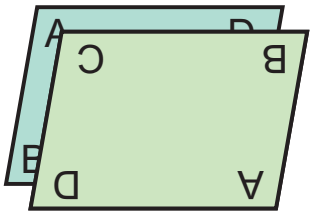
Activity

7 Let's confirm the properties of parallelograms.

1. The lengths of opposite sides.
2. The size of opposite angles.



Let's use congruent parallelograms.



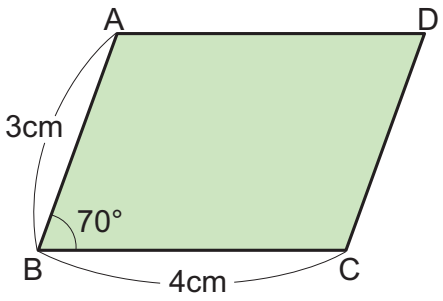
Let's use other congruent parallelograms.

In a parallelogram, the opposite sides are equal in length and the opposite angles are equal in size.

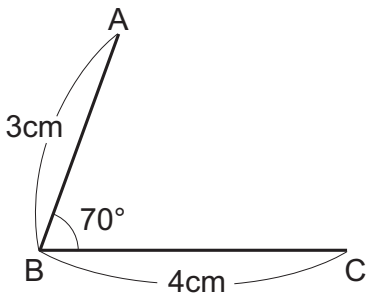
3. What is the sum of two adjacent angles in a parallelogram?

8 Let's think about how to draw a parallelogram like the one shown on the right.

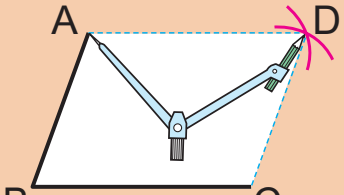
Explain Yamo and Naiko's methods.



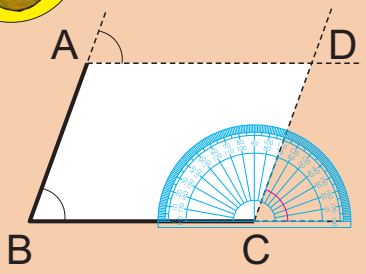
How can we determine the location of point D?



Yamo's idea



Naiko's idea



8 Yamo's methods of drawing a parallelogram.

The opposite sides of a parallelogram are parallel and equal.

Use a compass to determine point D.

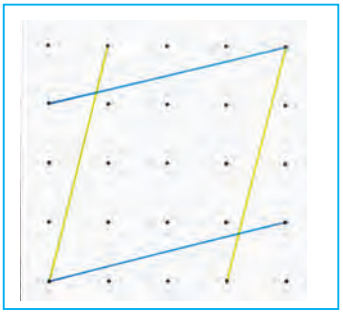
① Using a compass, take the length of BC from A, and draw an arc.

② Using a compass, take the length of AB from C, and draw an arc.

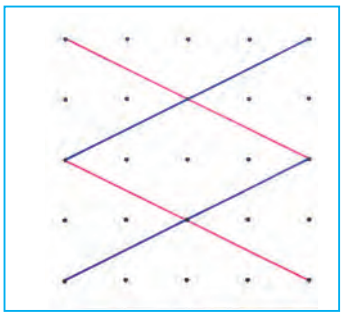
③ The intersection of the markings is D.

Rhombuses

Ⓒ

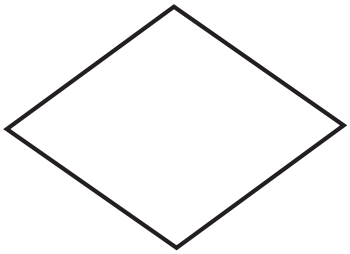


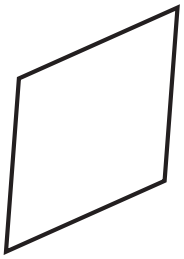
Ⓙ



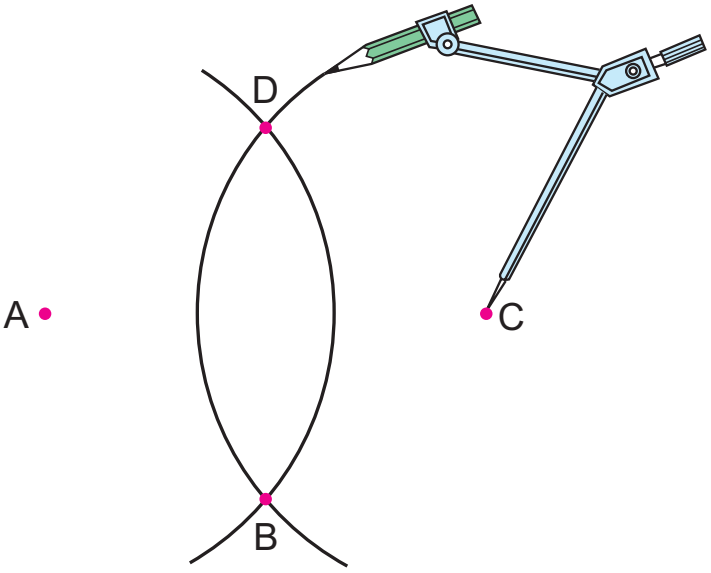
9 Let's compare the four sides of quadrilaterals Ⓒ and Ⓙ on page 52.

A quadrilateral with four equal sides is called **rhombus**.



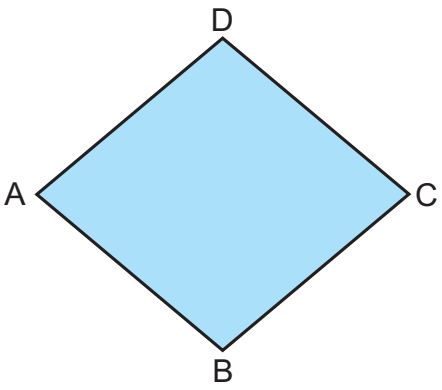


10 The figure below shows two arcs of circles with their centres at point A and C and the radius is same. The two arcs intersect at B and D.



1. Connect the points A B C D A to draw a quadrilateral.
2. Check the lengths of the sides and the angles. What quadrilateral is this?

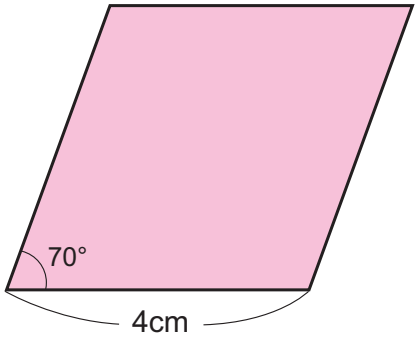
11 Check the following characteristics of the rhombus that you drew on the previous page.



1. Are the opposite angles equal?
2. Are the opposite sides parallel?

In a rhombus, the opposite angles are equal and the opposite sides are parallel.

12 Let's think about how to draw a rhombus.



Exercise

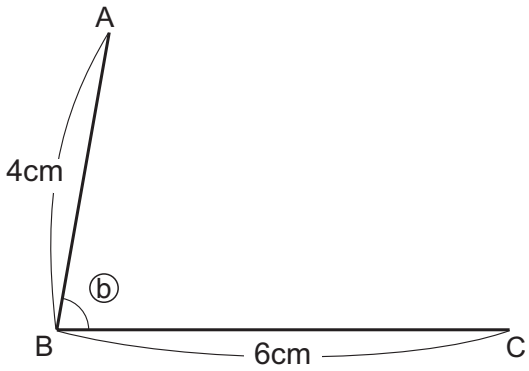
Let's look for rhombuses in our surroundings.

Activity

Relationships of Quadrilaterals

13 Let's draw a parallelogram with sides, 4 cm and 6 cm long with the following conditions;

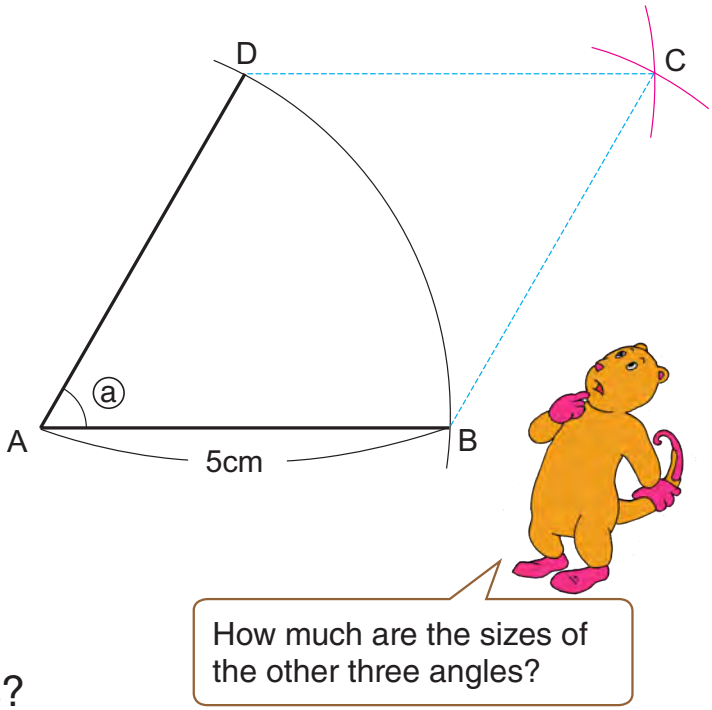
1. Angle ⓑ is 80° or 120°.
2. Angle ⓑ is 90°. What quadrilateral is this?



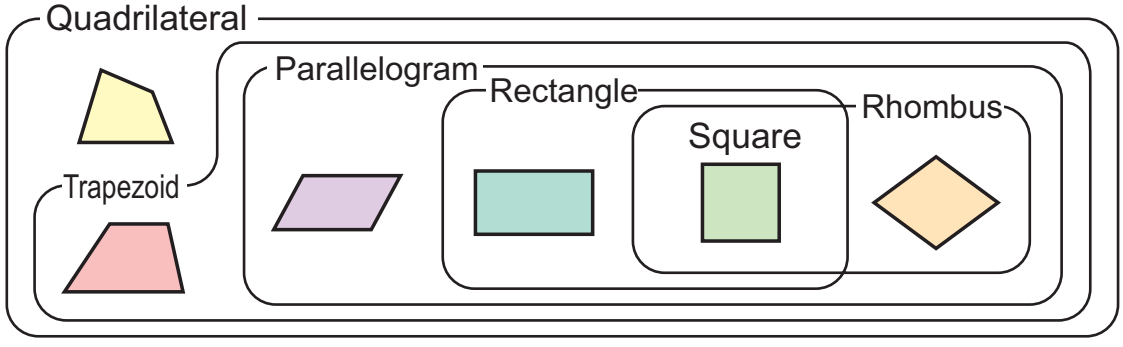
14 Let's draw a rhombus with 5 cm sides and the following conditions;

1. Angle ⓐ is 60°.
2. Angle ⓐ is 120°.
3. Angle ⓐ is 90°.

What quadrilateral is this?

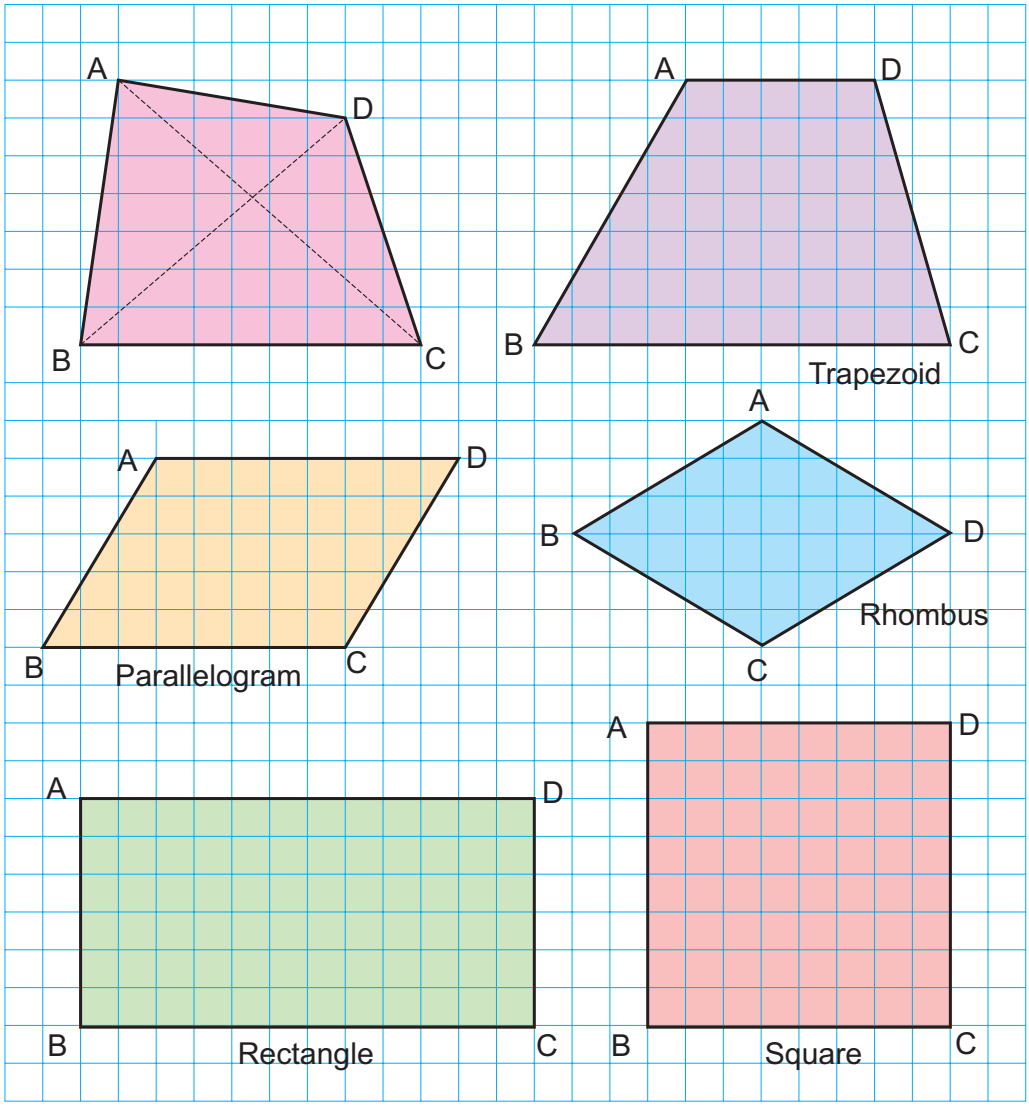


Relationships of Quadrilaterals



4 Diagonals of Quadrilaterals

1 Let's connect the opposite vertices of these quadrilaterals.



Each line that you drew by connecting the opposite vertices is called a **diagonal**.

There are 2 diagonals in each quadrilateral.

2 Look at the parallelogram, rhombus, rectangle and square on the previous page **1** and match them with the following characteristics.

1. Quadrilateral(s) with 2 diagonals that have a perpendicular intersection.

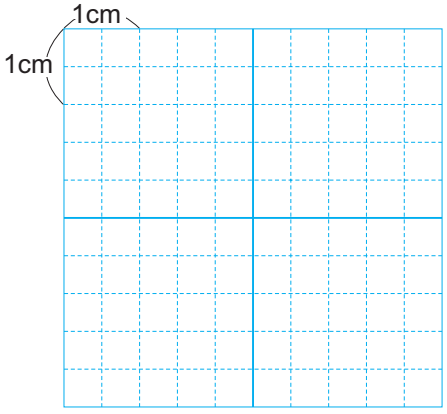
2. Quadrilateral(s) with 2 diagonals that are equal in length.

3. Quadrilateral(s) with 2 diagonals that are equal in length and have a perpendicular intersection.

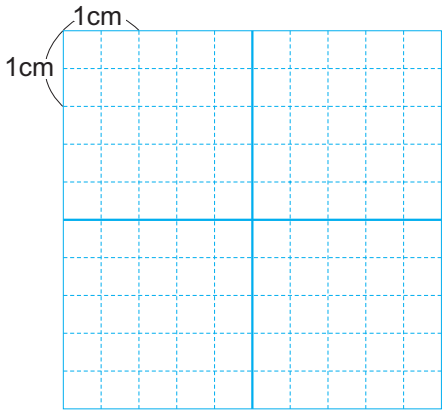
4. Quadrilateral(s) with 2 diagonals that are divided in half where they intersect.

3 Draw the following quadrilaterals by using the characteristics listed in **2**.

1. A rhombus with 4 cm and 3 cm diagonals.

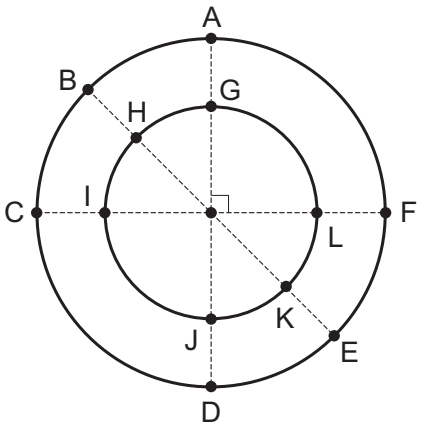


2. A square with 4 cm diagonals.



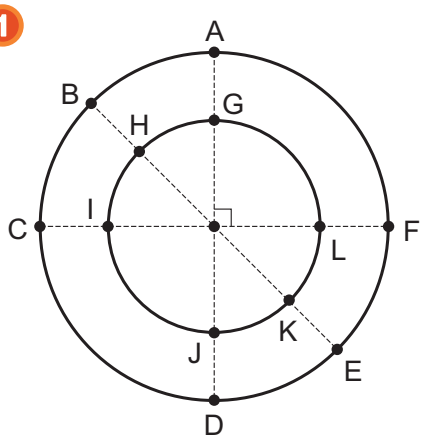
What Shapes Can You Make?

4 Look at the figure on the right. What quadrilateral can you make by connecting the following four points?

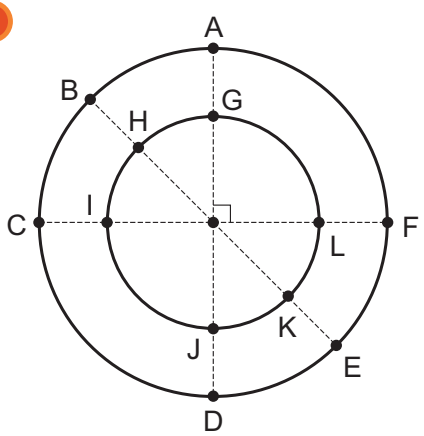


1. B, C, E and F.
2. G, I, J and L.
3. G, C, J and F.
4. A, H, D and K.

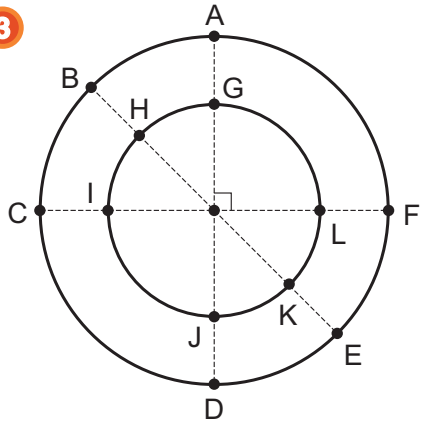
1



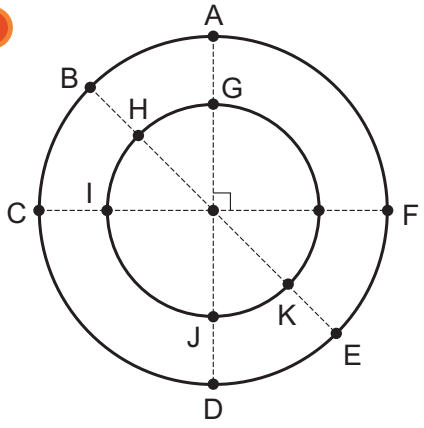
2



3



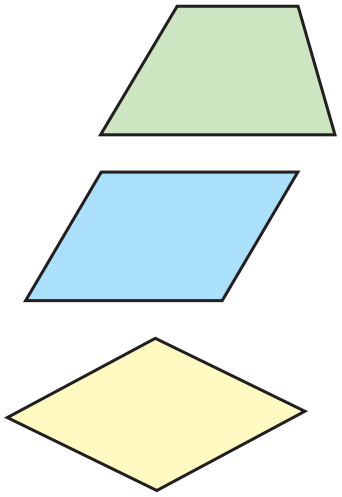
4



Exercise

Pages 61, 62, 63

1 Write the correct words in the ☐ by looking at the figures on the right.



① A quadrilateral that has one pair of ☐ opposite sides is called ☐.

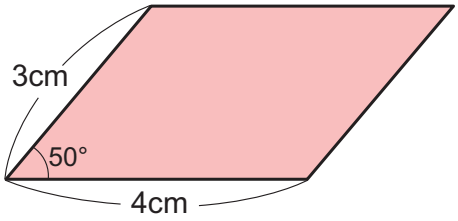
② A quadrilateral in which the opposite sides are both ☐ is called ☐.

③ A quadrilateral in which all 4 sides are ☐ in length is called ☐.

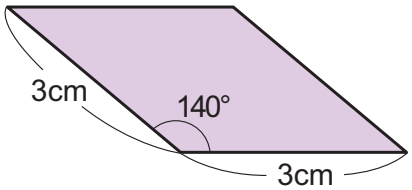
Pages 64

2 Draw parallelograms like the ones shown below.

①

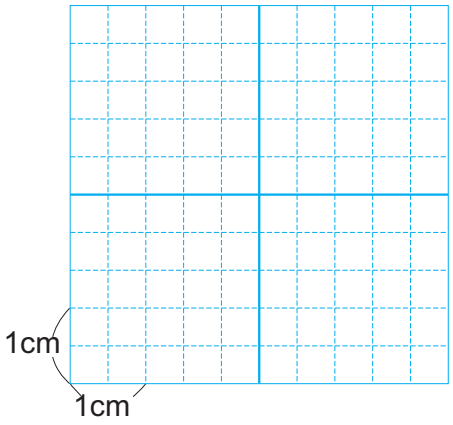


②



3 Draw a rhombus with diagonals that are 5 cm and 3 cm in length.

Pages 66

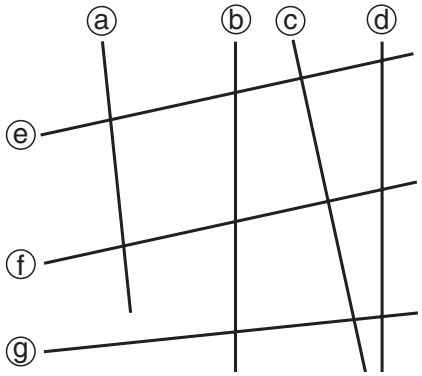


Problems

1 Let's find perpendicular and parallel lines.

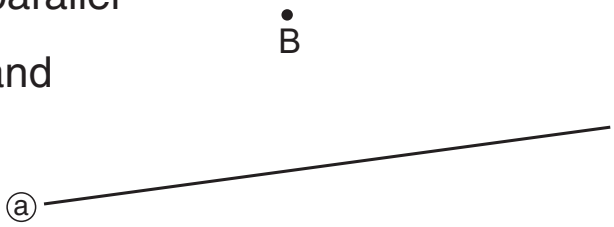
Explain why.

● Finding perpendicular and parallel lines.



2 Let's draw perpendicular and parallel lines with reference to line ⓐ and passing through point B.

● Constructing a perpendicular line and a parallel line.

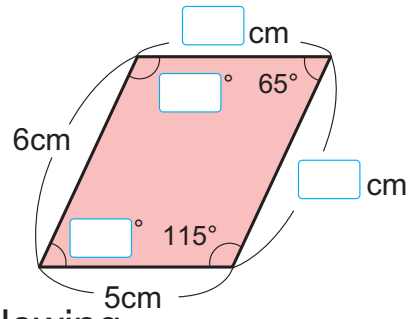


3 Study the parallelogram on the right.

Fill in the ☐ with appropriate numbers.

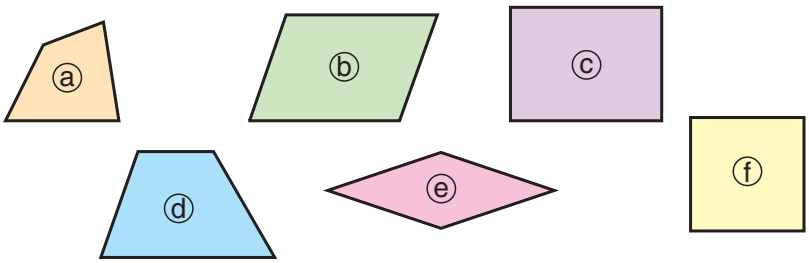
Construct a parallelogram that has the same sides and angles.

● Understanding the key properties of a parallelogram for construction.



4 Which of these quadrilaterals have the following characteristics?

● Identifying quadrilaterals by their characteristics.



① Two pairs of parallel sides. ② Four angles of equal size.

③ Diagonals of equal length. ④ Opposite sides with equal length.

⑤ Opposite angles with equal size. ⑥ No parallel sides.

7 Division by 2-digit Numbers

There are 6 packets with 10 lollies each.

These lollies are to be divided equally among 20 children.

How many lollies will each child receive?

$60 \div 20 = \square$

- 60: Total number of lollies
- 20: Number of children
- $\square$: Number of lollies for each child

By using the rules of division,

$60 \div 20$

$\downarrow \div 2 \quad \downarrow \div 2$

$30 \div 10$

$\downarrow \div 5 \quad \downarrow \div 5$

$6 \div 2$

The number of each child is found in the same way as when we divide 6 lollies between 2 children.

The number we want is the number in $\square$ of $\square \times 20 = 60$.
If we give 1 lolly to each child,
$1 \times 20 = 20$ and if we give 2 lollies to each child,
$2 \times 20 = 40$ so…

If I think of 2 groups of 10 children and divide 6 packets between the 2 groups…

Let's think about how to divide by 2-digit numbers.

1 Division by 2-digit Numbers (1)

1 There are 80 sheets of coloured paper. Each child receives 20 sheets of paper. How many children will receive the paper?

□ ÷ □ = □

Total sheets of paper | Number of sheets for each child | Number of children who will receive paper

Sare's idea

I think of stacks of 10 sheets,

8 ÷ 2 = □

Number of stacks of 10 | Number of stacks for each child | Number that each child will receive

Kekeni's idea

By using the rules of division,

80 ÷ 20 = □

↓÷2 ↓÷2

40 ÷ 10 = □

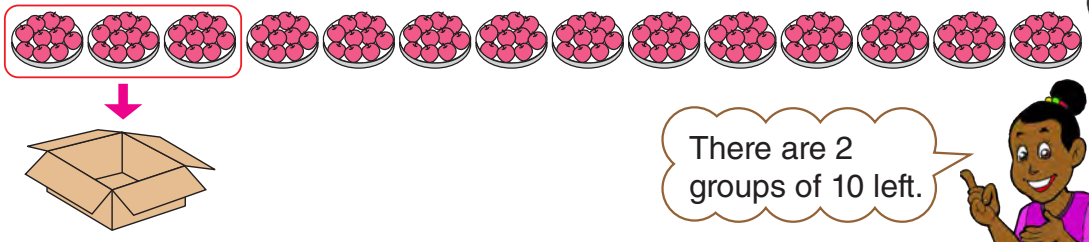
↓÷5 ↓÷5

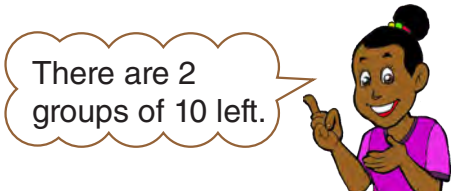
8 ÷ 2 = □

The division of 80÷20 can be reduced to 8÷2.

2 There are 140 apples. If 30 apples are put in each box, how many boxes are needed and what is the remainder?

140÷30=□ remainder □





Exercise

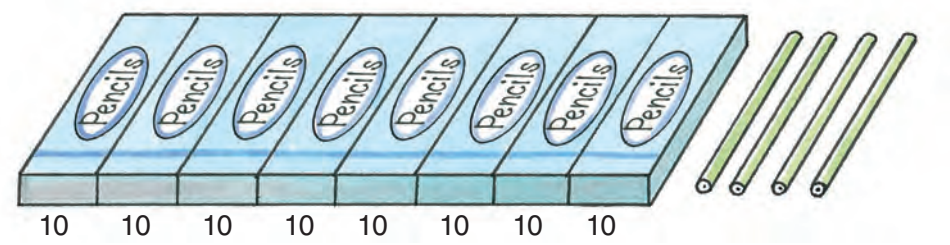
① 60÷30 ② 160÷40 ③ 70÷20 ④ 320÷60

Division in Vertical Form

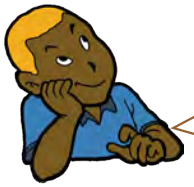
3 There are 84 pencils to be divided among 21 children.

How many pencils will each child receive?

Let's think about how to calculate 84 ÷ 21 in vertical form.

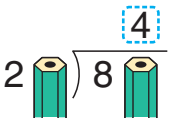


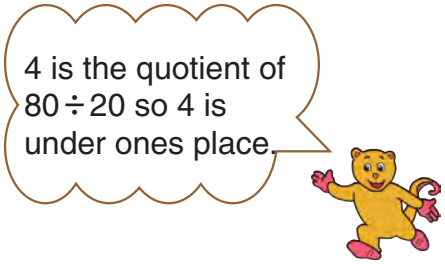
1 In which place value is the quotient written first?



$21\overline{)84}$

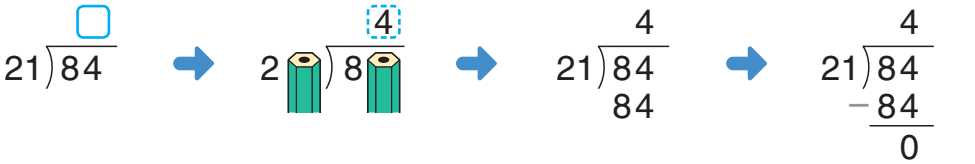
2 Estimate the quotient of 84 ÷ 21 by thinking of 80 ÷ 20 whose answer is the same as 8 ÷ 2.





3 Is the quotient 4? Check it yourself.

Division Algorithm for 84 ÷ 21 in Vertical Form



Exercise

① 99 ÷ 33 ② 84 ÷ 42 ③ 63 ÷ 21 ④ 64 ÷ 32

⑤ 48 ÷ 23 ⑥ 97 ÷ 32 ⑦ 29 ÷ 13 ⑧ 91 ÷ 44

How to Make a Temporary Quotient (1)

4 Let's think about how to divide 96 ÷ 33 in vertical form.

Estimate the quotient of 96 ÷ 33 by thinking of 90 ÷ 30 whose answer is the same as 9 ÷ 3.

$33\overline{)96}$

$33\overline{)96} \rightarrow 3\overline{)9} \rightarrow \begin{array}{r} 3 \\ 33\overline{)96} \\ 99 \end{array}$

Make the quotient smaller by 1.

We cannot subtract here.

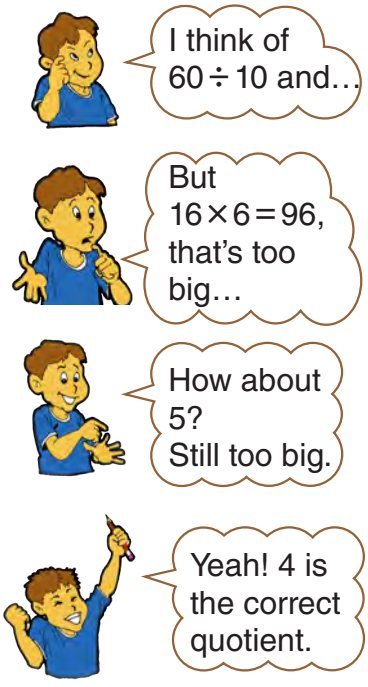
$$\begin{array}{r} 2 \\ 33\overline{)96} \\ -\,66 \\ \hline 30 \end{array}$$

30 is smaller than 33.

The first estimation of the quotient is called **temporary quotient**. If the temporary quotient is too large, we have to replace it with a quotient that is smaller by 1.

5 Let's think about how to divide 68 ÷ 16 in vertical form.

1. Make a temporary quotient.
2. Multiply the divisor and the temporary quotient.
3. Replace it with a number that is smaller by 1.
4. Make the temporary quotient smaller by 1 again.

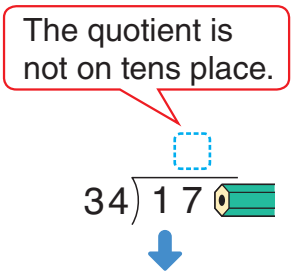


Exercise

① 56 ÷ 14　② 60 ÷ 12　③ 68 ÷ 24　④ 79 ÷ 13

⑤ 70 ÷ 14　⑥ 69 ÷ 15　⑦ 97 ÷ 16　⑧ 72 ÷ 15

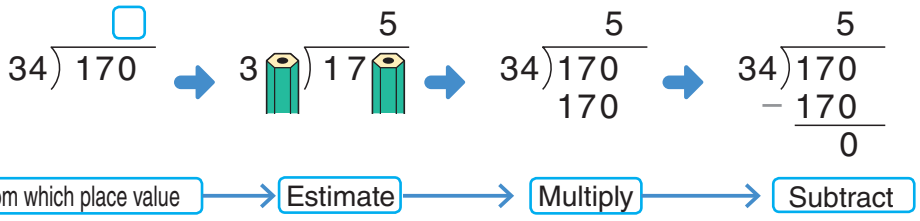
How to Make a Temporary Quotient (2)



6 Think about how to divide 170 ÷ 34 in vertical form.

1. In which place value is the quotient written?

Division Algorithm for 170 ÷ 34 in Vertical Form

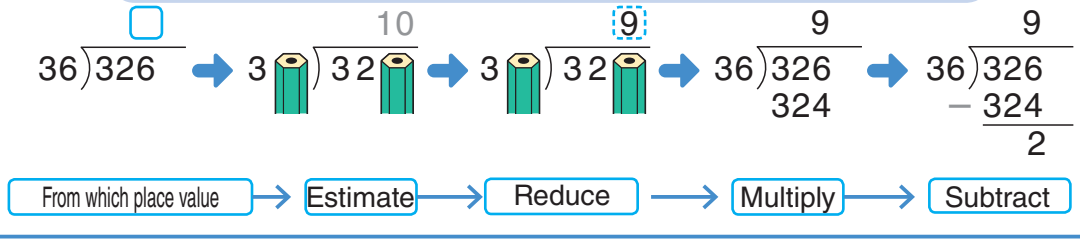


How to Make a Temporary Quotient (3)

7 Think about how to divide 326 ÷ 36 in vertical form.

1. In which place value is the quotient written?
2. Think of 320 ÷ 30 and make a temporary quotient.

Division Algorithm for 326 ÷ 36 in Vertical Form



If a temporary quotient is 10 or larger, replace it with 9.

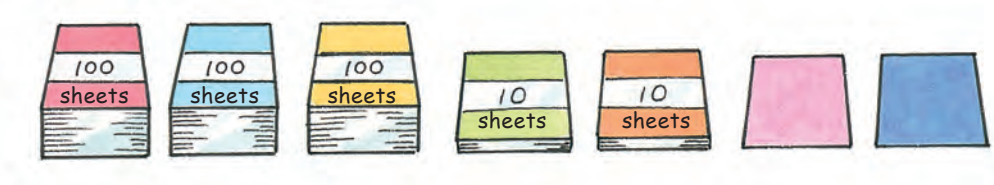
Exercise

① 255 ÷ 51　② 284 ÷ 71　③ 191 ÷ 24　④ 218 ÷ 38

⑤ 208 ÷ 21　⑥ 217 ÷ 25　⑦ 257 ÷ 29　⑧ 143 ÷ 18

2 Division by 2-digit Numbers (2)

1 There are 322 sheets of coloured paper. They are to be divided equally among 14 children. How many sheets of paper will each child receive?



1. Write a mathematical expression.
   ☐
2. In which place value is the quotient written?
3. If 3 stacks of 100 are changed into bundles of 10, how many stacks of 10 are there?
4. Divide the stacks of 10 in 3 among 14 children. ☐ ÷ 14
5. If the remainder of the stacks of 10 is changed into single sheets, how many sheets of coloured paper are there altogether?
6. Divide the single sheet of coloured papers among the 14 children.
   ☐ ÷ 14
7. How many sheets of paper will each child receive?

Can 3 stacks of 100 sheets of paper be divided among 14 children without dividing the stacks?

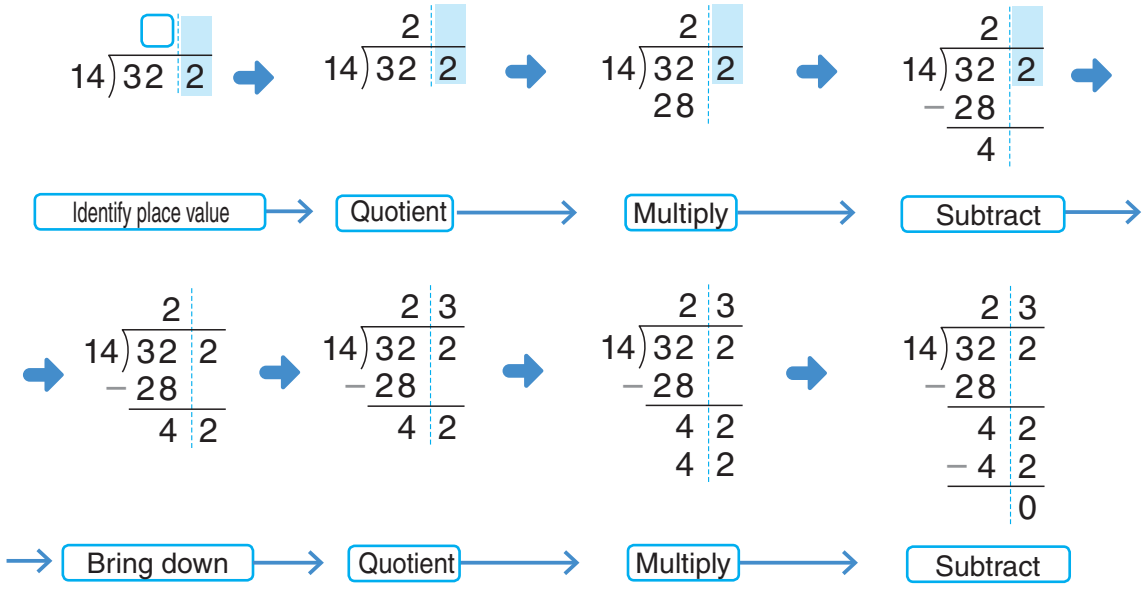
Number of stacks of 10	Number of single sheets
2	
14)32	2
−28	
4	

↓

2	3
14)32	2
−28	
4	2

= ☐ + ☐

Division Algorithm for 322 ÷ 14 in Vertical Form



To do division we decide the place of the quotient, write a number there, multiply, subtract and bring down, then repeat these steps.

2 Let's divide 980 ÷ 28 in vertical form.

In which place value is the quotient written?

2	8	9	8	0

Remember to bring down the 0 in the dividend.

Exercise

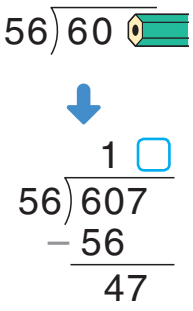
① 736÷16 ② 810÷18 ③ 851÷26

④ 585÷39 ⑤ 612÷36 ⑥ 578÷23

Divisions Where 0 is the Quotient

3 Let's think about how to divide 607 ÷ 56 in vertical form.

1. In which place value is the quotient written?
2. What number is written in the ones place of the quotient?



4 The division of 859 ÷ 21 in vertical form is shown on the right.
Explain the division methods in Ⓐ and Ⓑ.

Ⓐ

```
   40
21)859
   84
   19
    0
   19
```

Ⓑ

```
   40
21)859
   84
   19
```

Exercise

1 Let's divide in vertical form.

① 705 ÷ 34　② 913 ÷ 13　③ 856 ÷ 42

④ 531 ÷ 26　⑤ 576 ÷ 56　⑥ 942 ÷ 47

2 If there are any mistakes in the following divisions, let's correct them.

①
```
   2
22)446
   44
    6
```

②
```
   21
31)645
   62
   25
   31
    6
```

③
```
   10
57)704
   57
   34
```

3 Rules of Division and Multiplication

1 Do these calculations by using the rules of division.

When we do division problems, the quotient remains the same even if the dividend and divisor are **multiplied** by the same number. The quotient remains the same even if the dividend and divisor are **divided** by the same number.

1 $1500 \div 500 = \square$

$\div \square$ $\div \square$

$15 \div \square = \square$

2 $24000 \div 3000 = \square$

$\div \square$ $\div \square$

$\square \div 3 = \square$

2 Let's compare two mathematical sentences to find rules about multiplication.

1 $40 \times 6 = 240$

$\times \square$ $\div \square$

$80 \times 3 = 240$

2 $80 \times 3 = 240$

$\div \square$ $\times \square$

$40 \times 6 = 240$

3 $40 \times 6 = 240$

$\times \square$ $\times \square$

$80 \times 6 = 480$

4 $80 \times 6 = 480$

$\div \square$ $\div \square$

$40 \times 6 = 240$

5 $40 \times 6 = 240$

$\times \square$ $\times \square$

$40 \times 12 = 480$

6 $40 \times 12 = 480$

$\div \square$ $\div \square$

$40 \times 6 = 240$

There are some rules for multiplication as well as division.

Check the rules using other mathematical sentences.

Exercise

1 Let's divide in vertical form.

Pages 74 ~ 80

① 40 ÷ 20 ② 240 ÷ 60 ③ 130 ÷ 40 ④ 96 ÷ 32

⑤ 97 ÷ 27 ⑥ 738 ÷ 24 ⑦ 344 ÷ 43 ⑧ 385 ÷ 56

⑨ 411 ÷ 45 ⑩ 672 ÷ 28 ⑪ 453 ÷ 17 ⑫ 85 ÷ 19

2 There are 113 eggs. If you divide them equally amongst 12 children. How many will each child get and what will be the remainder?

Page 73

3 From a tape which is 7 m 60 cm long, how many 5 cm long tapes can you take out and how many cm will remain?

Page 81

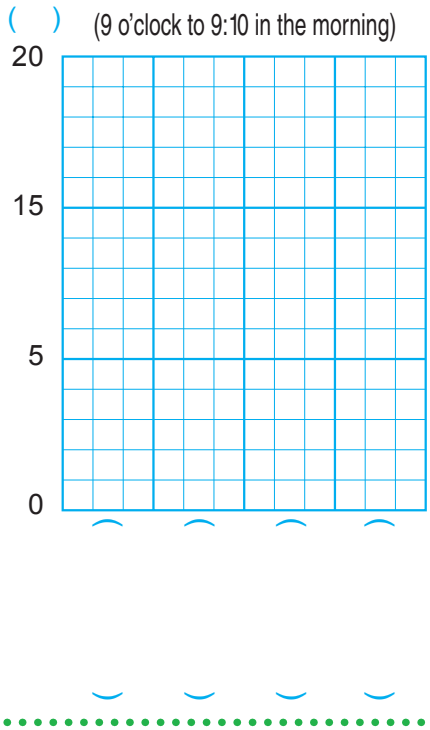
Grade 3 Do you remember?

The table below represents the data of vehicles which drove past the front of the school from 9 o'clock to 10 past 9 in the morning.
Let's represent it on the bar graph.

Vehicle Data
(9:00 am to 9:10 am in the morning)

Type of Vehicles	Number of vehicles
Car	𝍸 𝍸 ||||
Bus	|||
Truck	𝍸 𝍸
Others	|||
Total	

Vehicle Data
(9 o'clock to 9:10 in the morning)



Problems

1 Let's summarise how to divide by 2-digit numbers.

● Understanding division by 2-digit numbers in vertical form.

① The quotient is written from the ☐ place value.

② The quotient in the tens place is calculated from ☐ ÷ ☐.

③ The calculation for the quotient in the ones place is ☐ ÷ 32.

$32\overline{)768}$

2 Let's calculate in vertical form.

● Understanding division by 2-digit numbers in vertical form.

① 64 ÷ 21　② 74 ÷ 15　③ 505 ÷ 55

④ 715 ÷ 42　⑤ 567 ÷ 28　⑥ 736 ÷ 36

3 Uncle Stanley bought plywood pieces for his house that cost 75 kina each at the total cost of 900 kina.

How many pieces did he buy?

● Developing expression from an expression and calculating the answer.

4 Let's explain why the calculation 320 ÷ 40 can be done by 32 ÷ 4.

● Explaining using rules of division.

5 Let's find the numbers for each of the empty slots so that the products of all three numbers in each direction, vertical horizontal and diagonal are the same.

● Using multiplication and division in different ways.

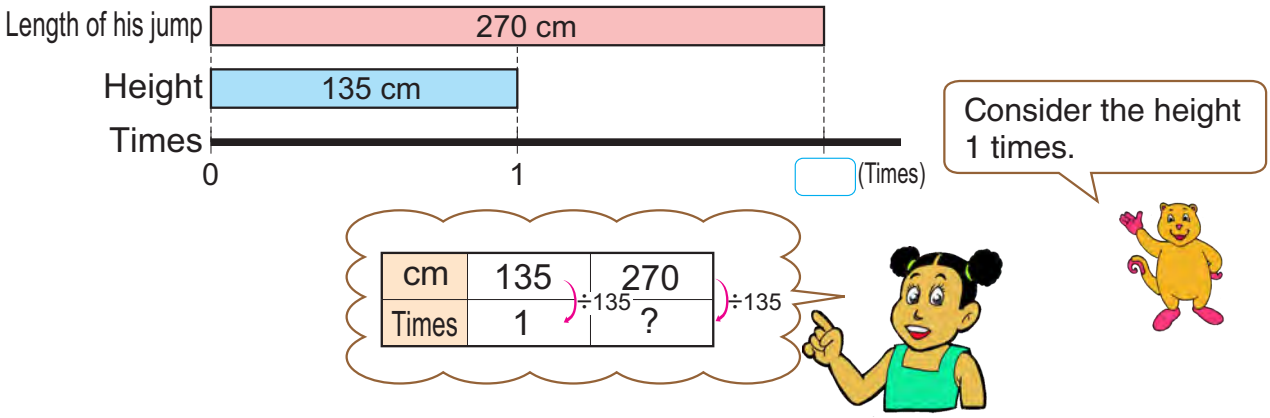
12	Ⓐ	2
Ⓑ	6	36
18	Ⓒ	Ⓓ

Calculation of multiples

Length of a Jump

1 Jack is 135 cm tall. He jumped 270 cm.

How many times more than his height did he jump?



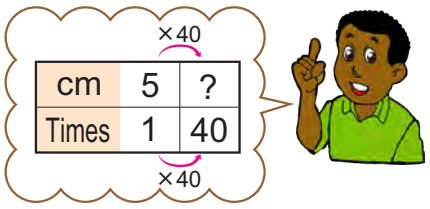
2 Takale who is an athlete jumped 8 m 50 cm in a long jump competition. His height is 170 cm. How many times more than his height did he jump?

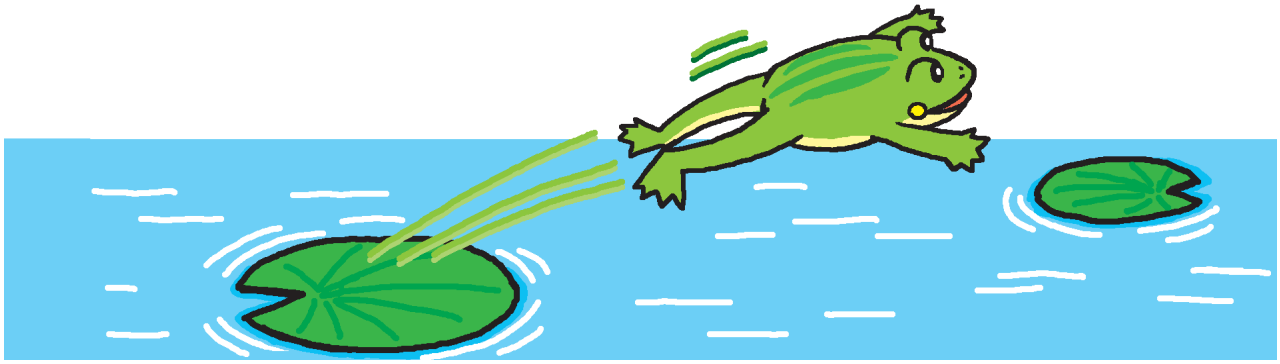
3 A frog can jump 40 times of its length.

The length of a frog is 5 cm.

How many m can it jump?

If you are able to jump 40 times your height, how many m and cm can you jump?





4 Ghandi is 135 cm tall.

He jumped twice the amount of his original height.

How many cm did he jump?

		×2
cm	135	?
Times	1	2
		×2

5 A grasshopper jumped about 10 cm high.

The distance of the jump was 120 cm.

How many times more than its height did the grasshopper jump?

		×12
cm	10	120
Times	1	?
		×?

6 Wangi jumped 5 m 40 cm in a long jump using a trampoline during a class game.

His height is 180 cm. How many times more than his height did he jump?

		×?
cm	180	540
Times	1	?
		×?

8 Line Graphs

Temperatures in Port Moresby and Tokyo (°C)

Month	1	2	3	4	5	6	7	8	9	10	11	12
Port Moresby	28	28	27	27	27	26	25	26	26	27	28	28
Tokyo	6	7	10	15	20	22	25	27	24	18	11	9

Let's find out how the temperature changes and the differences between the two places.

1. Using the table above, let's explore the changes in temperatures of the 2 places from month to month and explain their differences.
2. The bar graph on the next page shows the temperature of each month in Port Moresby. Looking at the graph, explain the way the temperature changes for each month.

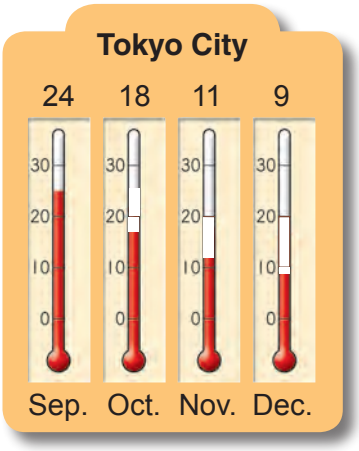
March - May ; Spring

July - August ; Summer

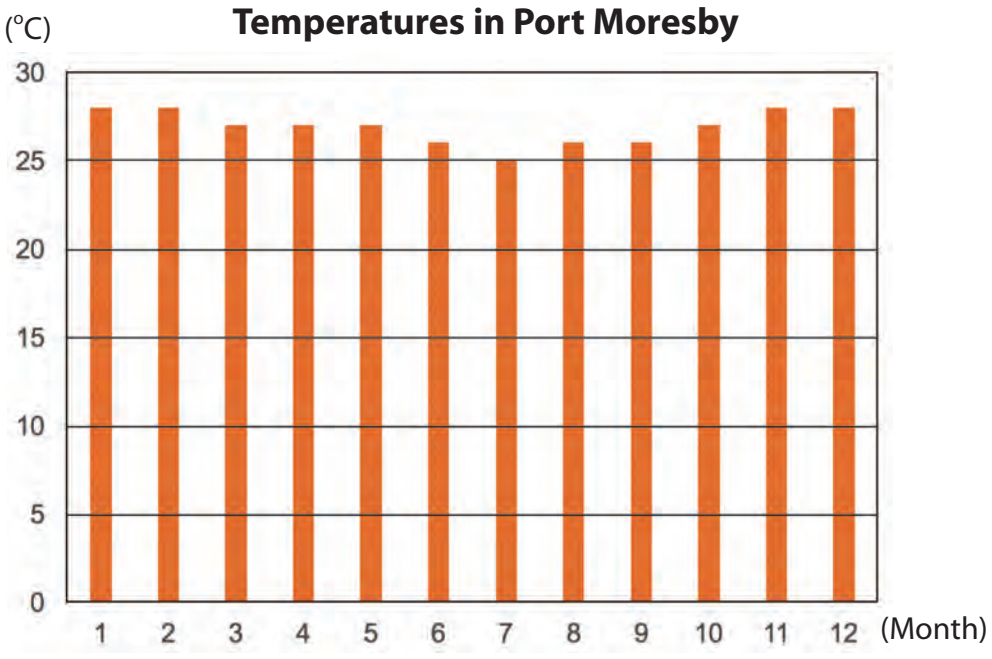
Tokyo

Nov - Feb ; Winter

Sep - October ; Autumn



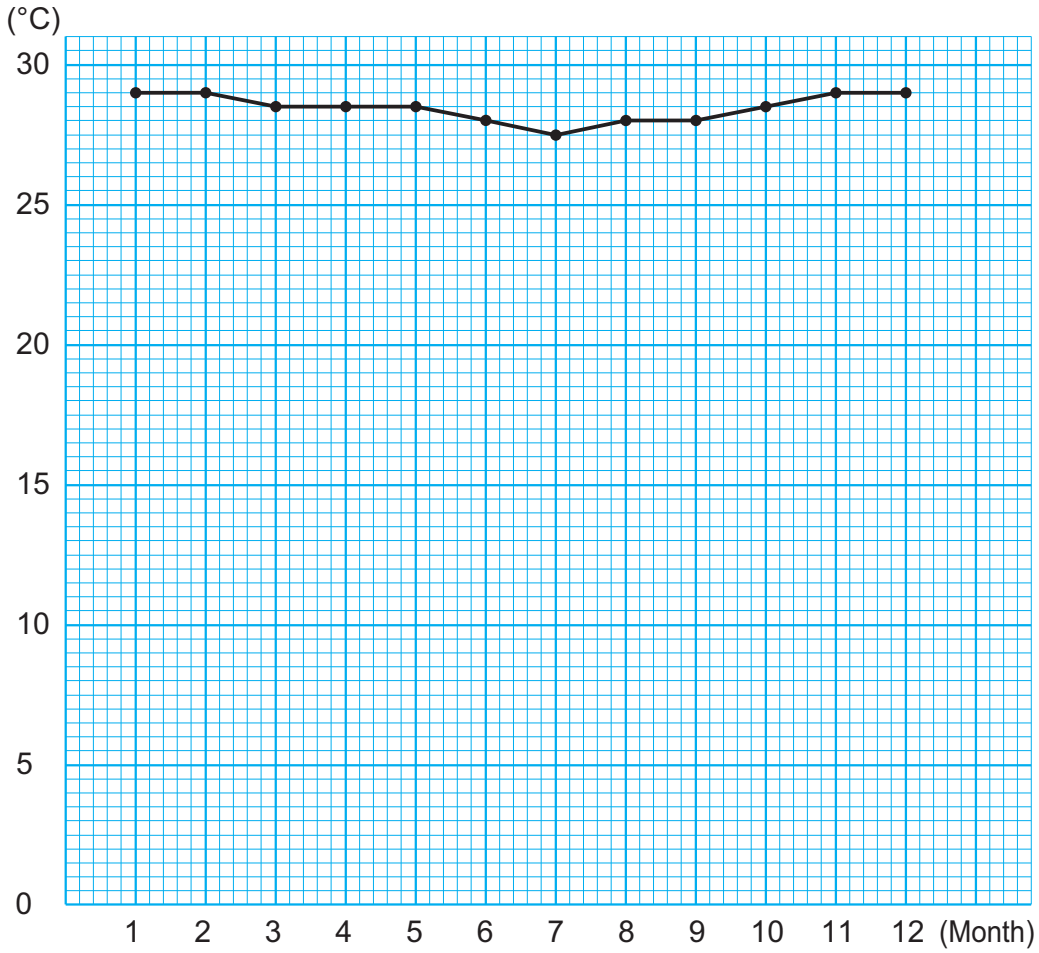
Where in the graph should we look to find how the temperature changes?



Let's think about a graph on how to represent the changes of temperatures for easier understanding.

1 Line Graphs

1 The tops of the bars in the page 87 were connected with lines to make the line graph below.



1 What is represented by the vertical axis and horizontal axis?

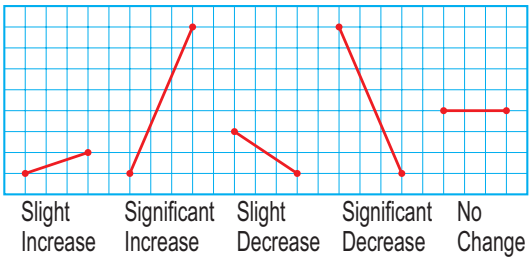
A graph that uses lines to show changes like in monthly temperatures is called **line graph**.

2 What is the temperature in March?

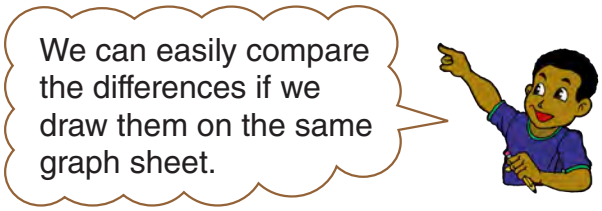
3 In which month is the temperature 26 degree Celsius?

2 Let's draw a line graph of the temperature changes of Tokyo into the graph of temperatures in Port Moresby on page 88 and compare them.

1. In each place what is the highest temperature and in which month?
2. How does the temperature change? Compare the differences in the temperature change between Port Moresby and Tokyo.
3. Between which consecutive months does the temperature change the most and in which place?



4. Let's talk about the advantages of using line graphs.



Exercise

For which of the following situations Ⓐ ~ Ⓕ is it better to use a line graph?

Ⓐ Your body temperature taken at the same time every day.

Ⓑ The types and numbers of vehicles that passed by your school in a period of ten minutes.

Ⓒ The numbers of children in your class with their favourite fruits.

Ⓓ The temperature recorded every hour at one place.

Ⓔ The heights of the children in your class.

Ⓕ Your height that was measured on each birthday.

2 How to Draw Line Graphs

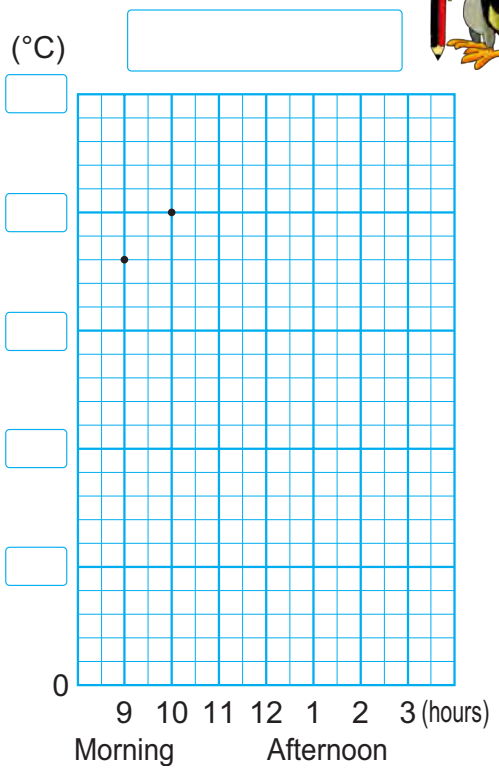
1 The table on the right shows the data of the temperature in a day. Draw a line graph from this table.

Temperature (16th of September)

Time(hours)	Temperature(°C)
9:00 am	18
10:00 am	20
11:00 am	22
12:00 pm	23
1:00 pm	24
2:00 pm	24
3:00 pm	23

How to Draw a Line Graph

(1) On the horizontal axis, write the time with equal spacing.
(2) Write a scale on the vertical axis to express temperatures up to 24 degrees.
(3) Write dots on the table for each temperature and time.
(4) Connect the dots with a line.
(5) Write a title and the units.



Activity

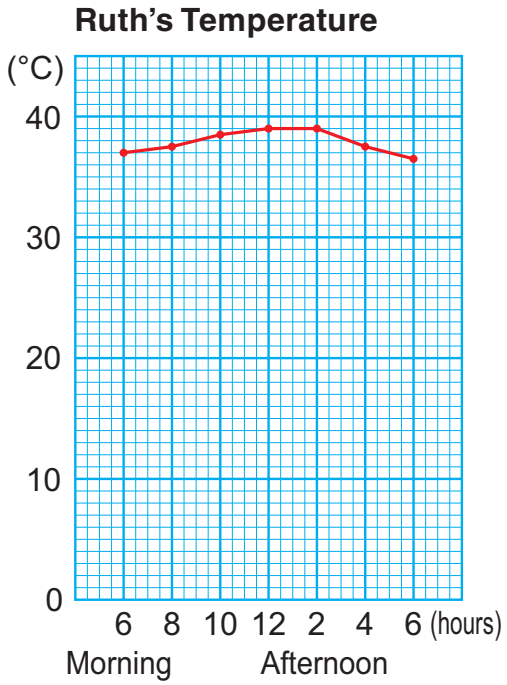
Exercise

The table shows daily temperatures at 1 pm for Manus which was recorded for 5 days.
Draw a line graph from this table.

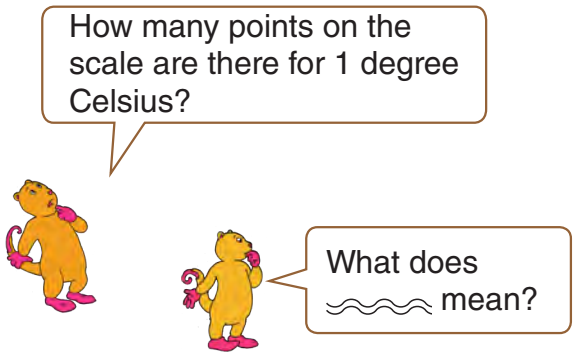
Temperatures at 1 pm in Manus	
Day	Temperature (°C)
1	30
2	29
3	31
4	29
5	28

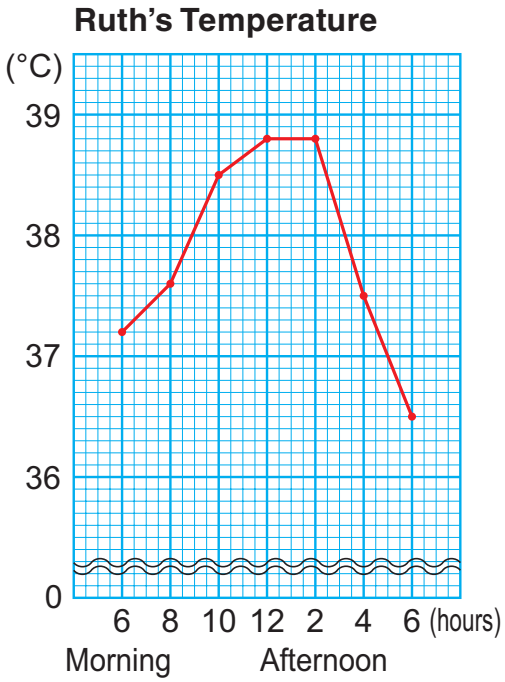
3 Ideas for Drawing Line Graphs

1 Ruth caught a cold. She took her body temperature and expressed it on a line graph.



1. What was her temperature in (°C), at 8 o'clock in the morning?
2. Ruth redrew the graph as shown below to make the change in her temperature easier to see. What was her idea?





3. By how many °C did her temperature rise between 6 o'clock in the morning and 8 o'clock in the morning?
4. Between which times did her temperature change the most?
5. How did Ruth's temperature change?

(10 thousand t)

0

1996 97 98 99 2000 01 02 03 04 05 06 07 (Year)

92 = □ – □

2 The table on the right shows the amount of used papers and collected papers.

1. Let's draw line graphs on the left by considering the scales on the vertical axis.
2. What can you read from the graph?

The Amount of Used and Collected Papers

(10 thousand tons)

Year	Amount of used	Collected papers
1996	3076	1577
1997	3119	1654
1998	2998	1657
1999	3062	1706
2000	3176	1833
2001	3107	1912
2002	3065	2005
2003	3093	2044
2004	3138	2151
2005	3138	2232
2006	3154	2283
2007	3130	2332

Exploring the Lengths of Shadows

3 Elijah recorded the length of the shadow and kept the data. The table below shows the records of the lengths of the shadows of a 30 cm stick measured in June and December. Let's show the data in the line graph on the next page.

Length of Shadows (June 21)

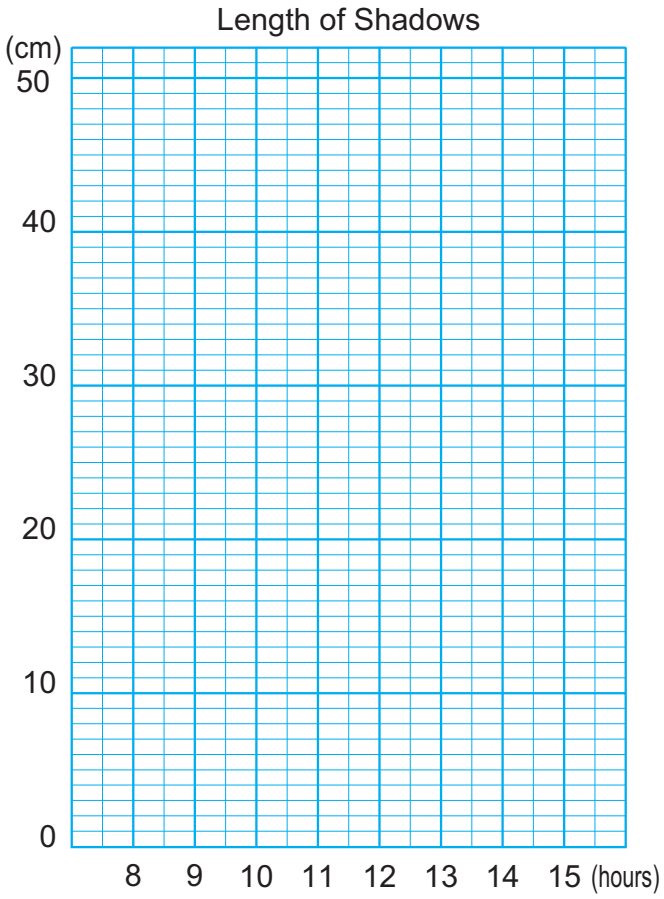
Time (hours)	8	9	10	11	12	13	14	15
Length of shadows (cm)	51	27.8	20	16.8	16.3	18.1	23.1	36.1

Length of Shadows (December 21)

Time (hours)	8	9	10	11	12	13	14	15
Length of shadows (cm)	12.1	7.9	4.9	2.8	2.1	3.5	6	9.3

1 Between which consecutive hours is the biggest difference?

2 What can be understood from the graph?



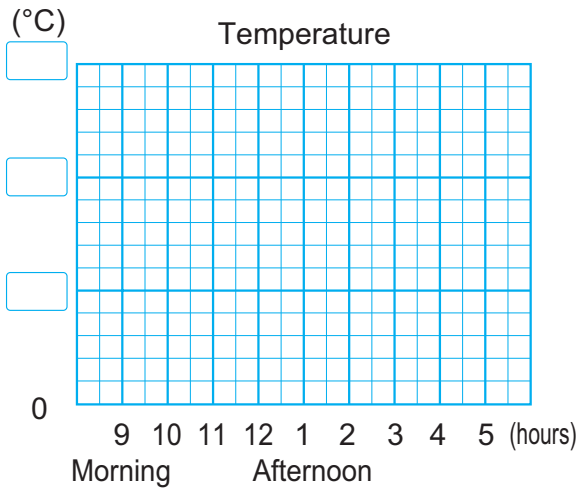
Exercise

1 The table below shows how the temperature changed.
Draw a line graph from the data in the table.

Page 94

Temperature

Time(hours)	Temperature(°C)
9:00 am	3
10:00 am	4
11:00 am	6
12:00 pm	7
1:00 pm	8
2:00 pm	10
3:00 pm	10
4:00 pm	9
5:00 pm	8



Problems

1 Consider the conditions Ⓐ ~ Ⓓ and decide which ones are better expressed as line graphs.

● Understanding the advantages of line graphs.

Ⓐ The heights of the children in your class in April.

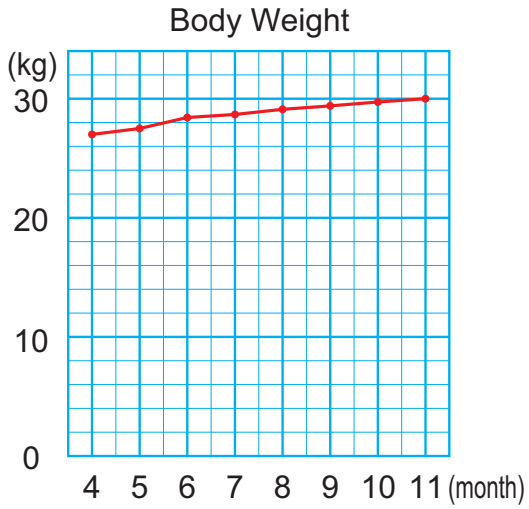
Ⓑ Your height as it was measured every April.

Ⓒ The temperature that was recorded at a particular time every day.

Ⓓ Temperatures that were recorded in different places at the same time.

2 The graph on the right shows how Tau's weight changed.

He redrew it below to make it easier to read.



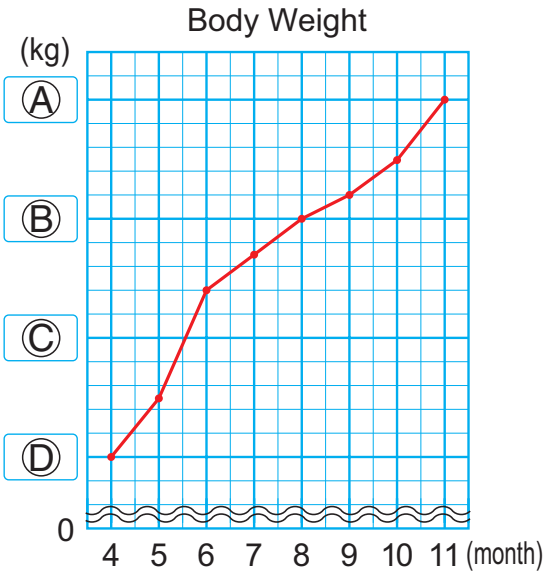
● Changing graphs that are easier to read.

① Let's fill in Ⓐ ~ Ⓓ.

② How is the second graph different from the first graph?

③ Let's find as many differences as possible.

Between which consecutive months did his weight increase the most? And between which consecutive months did his weight increase the least?



9 Decimal Numbers 1

Let's investigate the amount of water in different containers by measuring them with a 1 dL measuring cup.

1 dL measuring cup

There are exactly 2 cups of 1 dL.

There are exactly 2 cups and a remaining part that is more than one half.

How many decilitres can we say is in the remaining part?

2 dL and a little remaining part.

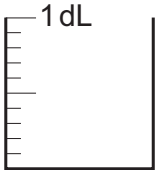
1 How to Represent the Remaining Parts

1 How many dL can we say is the amount of water in a cup?

1 dL is one of 10 equal parts of 1 L. Can we use the same idea?

Let's investigate how to represent the remaining part.

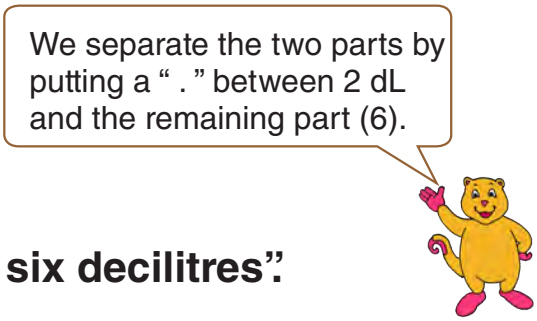
1. Let's develop the smaller unit scale by dividing a 1 dL measuring cup into 10 equal parts.



2. How can we represent the amount of water in these cups by using dL?

The number of dL measuring cups	The number of scales of the remaining part
	
2 cups	6 smaller scales

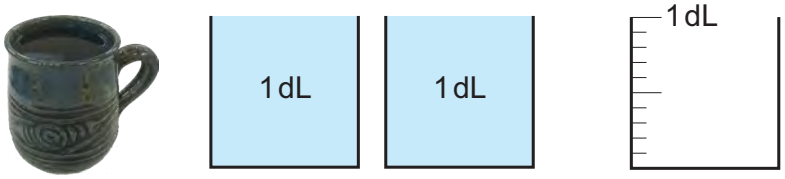
2.6 dL



We read this as **"two point six decilitres".**

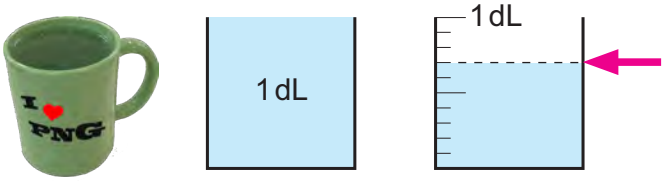
2 How many decilitres of water are there in the following containers?

1. Clay Coffee cup



. dL

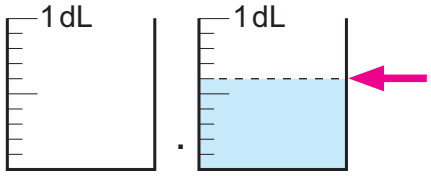
2. Ordinary Coffee cup



. dL

3 How many decilitres of water are there in the following containers?

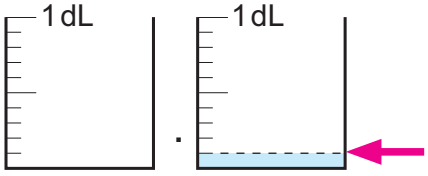
1 Ice block cup



☐ . ☐ dL

For the amount of water which is less than 1 dL, a number of 1 dL measuring cup is 0 and the number of units of the smaller scales is 6, so we write 0.6 dL and read it as **"zero point six decilitres".**

2 Drink cap



☐ . ☐ dL

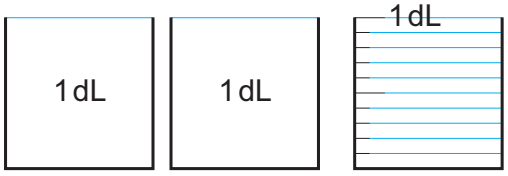
Each unit of the smaller scales is 0.1 dL.
0.1 dL is one of the 10 equal parts of 1 dL.
0.6 dL is 6 sets of 0.1 dL.

Numbers like 2.6, 0.6 and 0.1 are called decimal numbers and " . " is called decimal point. The place to the right of the decimal point is called tenths place. Numbers like 0, 1, 6 and 230 are called whole numbers.

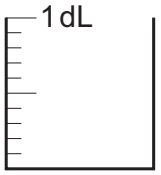
2 . 6
…Ones place
…Decimal point
…Tenths place

4 Let's colour in the following amounts of water.

① 2.8 dL



② 0.4 dL



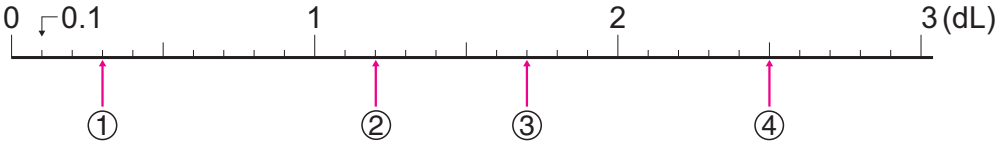
5 The amount of water in the water container is 2.4 dL.

① There are 2 dL and how many decilitres in the remaining parts?

② Colour the scale on the right to show the amount of water in the water container.

③ How many units of 0.1 dL are equal to 2.4 dL.

6 On the number line, which amounts are expressed by ①, ②, ③ and ④ in dL? How many sets of 0.1 dL are their amounts of water?



Exercise

1 How many decilitres are the following amounts of water? Let's answer in decimals.

① 9 sets of 0.1 dL. ② Amount of 3 dL and 0.5 dL.

2 Fill in the ☐ with a number.

① 2 dL and 0. 7 dL make ☐ dL.

② 1 dL and ☐ dL make 1.8 dL.

③ 1.6 dL is ☐ sets of 0.1 dL.

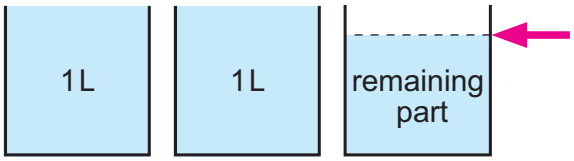
④ 21 sets of 0.1 dL is equal to ☐ dL.

⑤ Amount of 2 sets of 1 dL and 3 sets of 0.1 dL make ☐ dL.

7 Measure the amount of water in a bucket.

How many litres are there?

1 How can we represent the remaining part in decimal numbers?



What kind of scales should we make?

2 How many litres are there?

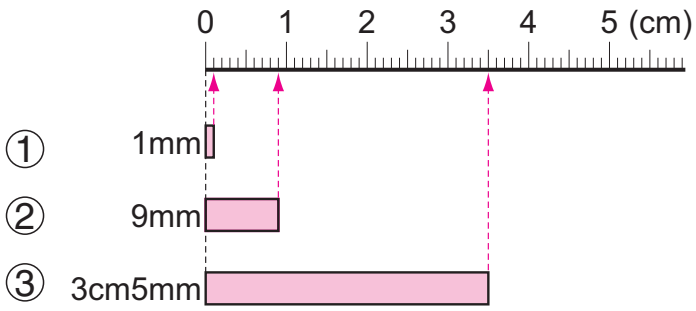
2 L and 8 sets of the smaller scales.

□ . □ L

The remaining part that we get by measuring with a 1L (litre) measuring cup can also be represented as a decimal number by making smaller scales of 0.1 dL that are made by dividing a 1L measuring cup equally into 10 smaller scales.

8 Write the following lengths in decimal numbers by using cm.

How many sets of 1 mm are in 1 cm?



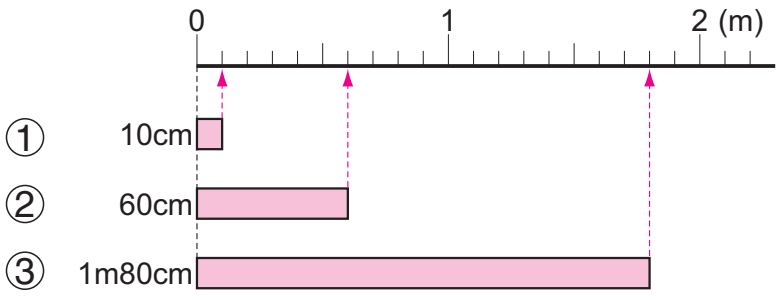
① □ cm

② □ cm

③ □ cm

9 Write the following lengths in decimal numbers by using m.

How many sets of 10 cm are in 1 m ?



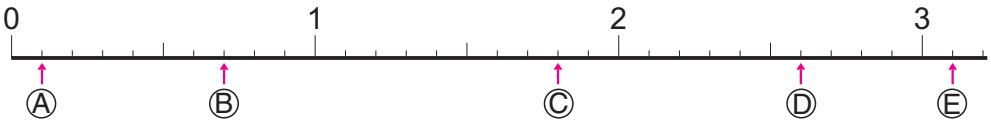
① □ m

② □ m

③ □ m

2 The Structure of Decimal Numbers

1 Let's think about the number line below.



1. Write decimal numbers that each ↑ is pointing at.
2. How many sets of 0.1 dL are the decimal numbers expressed in Ⓐ ~ Ⓔ, respectively?
3. Which is larger, 2.1 or 1.9? Put the arrows ↓ on the number line for comparing two decimal numbers.
4. Which is larger, 0 or 0.1?

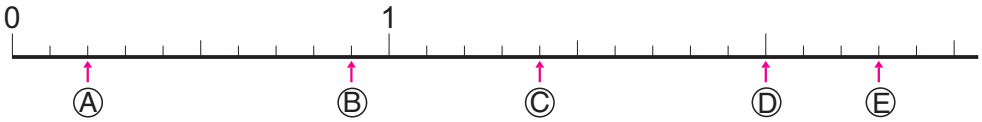
2 What is 10 sets of 0.1 ?

3 Fill in each box with a number.

1. 0.6, 0.7, ☐, 0.9, ☐, ☐
2. 5.2, 5.1, ☐, 4.9, 4.8, ☐

Exercise

1 Let's write the numbers that each ↑ is pointing at.



2 Fill in the ☐ with a number.

① 2.5 is the sum of ☐ sets of 0.1.

② 0.7 is the sum of ☐ sets of 0.1.

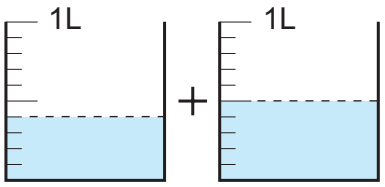
③ The sum of 18 sets of 0.1 is ☐.

3 Which number is larger? Fill in the ☐ with the correct inequality sign.

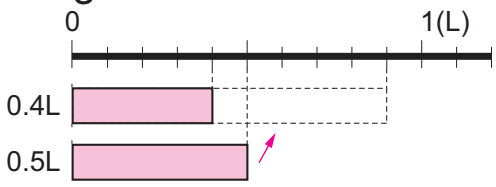
① 3 ☐ 3.1 ② 4.6 ☐ 3.8 ③ 1.2 ☐ 0.9

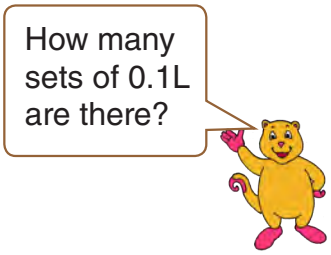
3 Addition and Subtraction of Decimal Numbers

1 Kua's family drank 0.4 L of milk in the morning and 0.5 L of milk in the afternoon. How many litres of milk did they drink altogether?



0.4 + 0.5





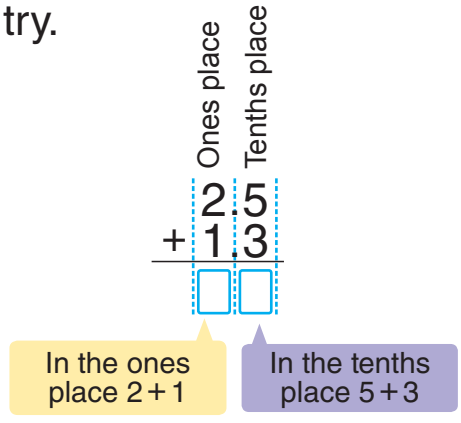
2 There are 2.5 dL of juice in a large cup and 1.3 dL of juice in a small cup. How many decilitres are there altogether?

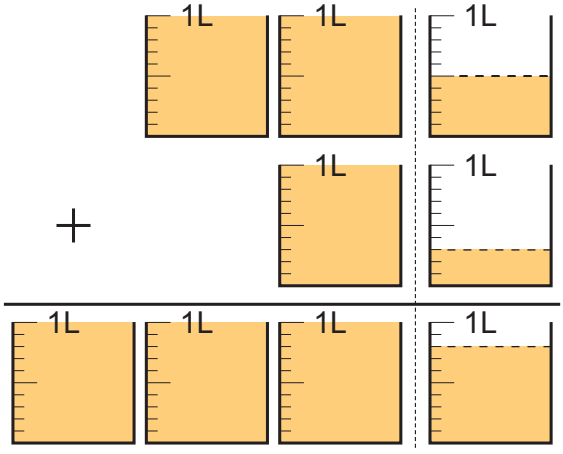
2.5 + 1.3

1. Let's think about how to calculate.
2. Let's think about how many sets of 0.1 are there.

Addition of decimal numbers in vertical form can be done if we line up numbers according to their place value just like whole numbers.

Let's try.





Exercise

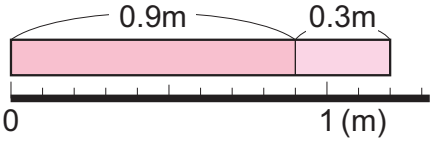
Let's add in vertical form.

① 0.2 + 0.5 ② 0.8 + 0.1 ③ 3.2 + 1.6 ④ 2.8 + 7.1

3 The 0.9 m tape and the 0.3 m tape are put together.

How long is the tape in m.

0.9 + 0.3



① Let's think about how many sets of 0.1 are there.

② Let's add in vertical form.

	0	.	9
+	0	.	3

Since the answer will be more than 1, I will carry up to the ones place.

4 Let's think about how to add in vertical form.

① 2.3 + 4.8

+		

② 0.9 + 7.1

+		

③ 5 + 3.4

+		

If the number in the last place of the answer is 0, what should we do with the 0?

Exercise

1 There is 5.6 L of water in the container. When we add 0.9 L of water in the container, how much water in L do we have?

2 Let's add in vertical form.

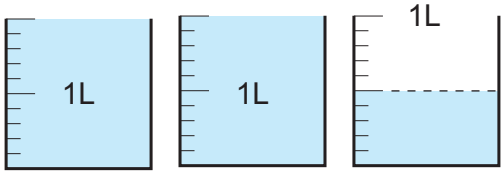
① 0.4 + 0.8　② 0.6 + 0.7　③ 3.2 + 1.9　④ 4.7 + 3.4

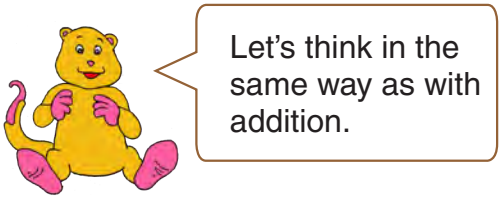
⑤ 2.9 + 0.3　⑥ 7.3 + 0.7　⑦ 0.1 + 0.9　⑧ 6 + 3.5

5 There is a 2.5 dL of milk. 1.2 dL is used to make soup.

How many litres are left?

2.5 – 1.2





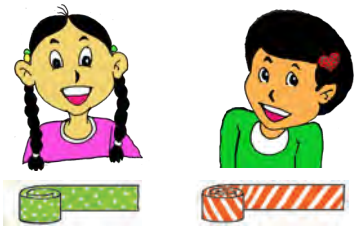
1. Think about how many sets of 0.1 are there.
2. Let's subtract in vertical form.

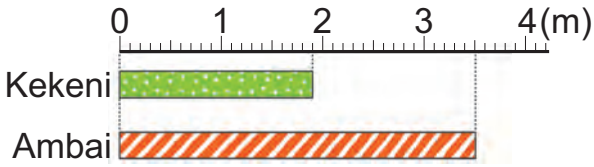
	2	.	5
–	1	.	2

6 Kekeni has a 1.9 m ribbon and Ambai has a 3.5 m ribbon.

Which ribbon is longer and by how many metres?

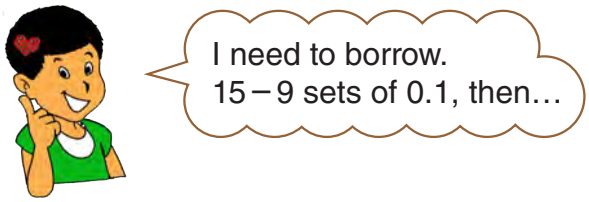
3.5 – 1.9





1. Think about how many sets of 0.1 are there.
2. Let's calculate in vertical form.

	3	.	5
–	1	.	9



Exercise

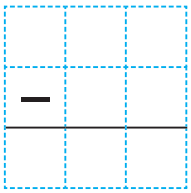
Let's subtract in vertical form.

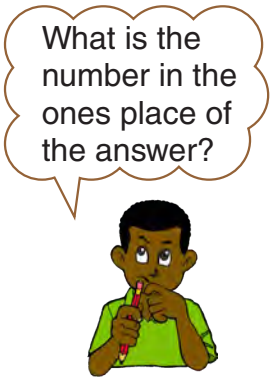
① 0.7 – 0.3　② 0.9 – 0.6　③ 3.9 – 1.5　④ 6.7 – 1.4

⑤ 2.8 – 0.5　⑥ 4.1 – 1.7　⑦ 5.4 – 2.5　⑧ 2.8 – 0.9

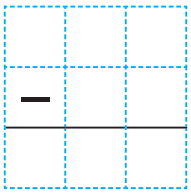
7 Let's think about how to subtract in vertical form.

1 4.2 – 3.8





2 4 – 1.8



Exercise

Let's subtract in vertical form.

① 2.4 – 1.6　② 1.5 – 0.9　③ 3 – 1.2　④ 2 – 0.7

How to Use Your Exercise Book !

Let's write in your exercise book what you have learned about the meaning of decimals and how to calculate.

- ○ What I understood.
- ○ What was interesting to me.
- ○ What I felt was difficult.
- ○ What was good to me about my friend's ideas.
- ○ What I want to do next.

How do you express things using decimals?

Date: / / ( )

12. Decimal Numbers

1. What I understood.

◎ Decimal and Whole Numbers

- In whole numbers, every number multiplied by 10 moves to the next higher place.
- Numbers which is in the ones places divided by 10 moves to the tenths places.
- Write a decimal point between the ones place and the tenths place.

2. What was interesting for me.

- I can express any number smaller than 1 the same as the whole numbers.
- Quantities expressed by dL and mm can be expressed by L and m using decimals.
- I can do the addition and subtraction of decimals in vertical form the same as for calculating them with whole numbers.

3. What I want to do next.

- I want to represent any decimal number smaller than decimal numbers with the tenths places. To represent them, I think of dividing them into 10 equal parts.

Exercise

1 Let's fill in the ☐ with a number.

Pages 98 ~ 101

① The sum of 3 dL and ☐ dL is 3.4 dL.

② 2.3 dL is ☐ sets of 0.1 dL.

③ The sum of 1 m and 0.7 m is ☐ m.

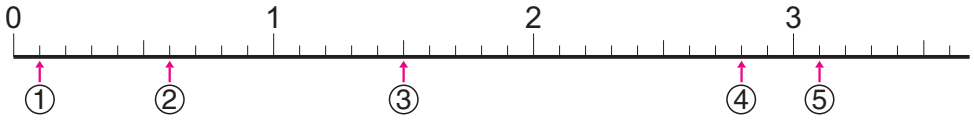
④ 27 sets of 0.1 cm is ☐ cm.

⑤ 2.5 is the sum of 2 and ☐.

⑥ ☐ sets of 0.1 is 4.3.

2 Let's write the numbers that each ↑ is pointing at.

Page 101



3 Which number is larger? Fill in the ☐ with a correct inequality sign.

Page 101

① 0.8 ☐ 1.1 ② 2.3 ☐ 3.2 ③ 5.1 ☐ 5

4 Let's calculate.

Pages 102 ~ 105

① 3.4 + 1.5 ② 0.2 + 0.9 ③ 5.7 + 2.6 ④ 4.3 + 0.7

⑤ 5.8 − 3.3 ⑥ 4.6 − 2.7 ⑦ 6.2 − 5.8 ⑧ 5 − 4.1

Grade 3 Do you remember?

Let's draw the following shapes.

① A circle with radius 4 cm.

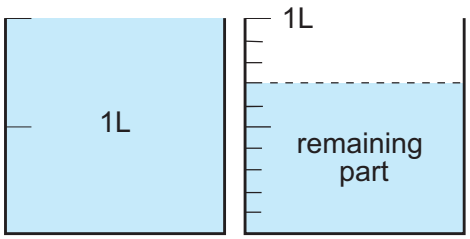
② A circle with diameter 6 cm.

③ An equilateral triangle with 6 cm sides.

④ An isosceles triangle with sides of 7 cm, 7 cm and 5 cm.

Problems

1 When some children measured the amount of water in a bottle with a 1L measuring cup, they found that there was 1 litre and a remaining part.



Fill in the ☐ with a number.

● Understanding how to represent the remaining part.

① When we want to represent the amount of water using L as the unit, we need to divide the 1 L measuring cup equally into ☐ parts.

② The amount of water in the remaining part is ☐ L.

③ The amount of water in a bottle is ☐ L.

④ This amount is ☐ sets of 0.1 L.

2 Fill in the ☐ with a number.

● Understanding the system of decimal number.

① 1.4 is ☐ sets of 0.1. ② ☐ sets of 0.1 is 1.

③ 4.3 is the sum of 4 and ☐.

3 Let's calculate.

● Calculating addition and subtraction of decimal numbers.

① 0.6 + 5.2 ② 1.5 + 3.8 ③ 3.6 + 1.4

④ 4.7 − 1.6 ⑤ 6.3 − 5.9 ⑥ 7 − 0.7

4 There are 0.8 L of coconut oil in a small bottle and 1.1 L of coconut oil in a large bottle. How many litres are there altogether? And how many litres is the difference?

● Write the expression with decimal numbers and find its answer.

10 Round Numbers

The following family members (Father, Mother, Julie and Wally) went to a car dealer yard and had the following discussion. Let's think about the ways in which they are talking about the price of a car selling at 26 300 kina.

Wally: Let's buy it, it's about 20 thousand kina.

Julie: 26 thousand kina is cheaper than other car dealers.

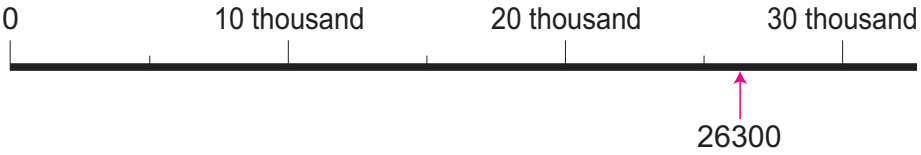
Mother: If we have 27 thousand kina, we can buy.

Father: 30 thousand kina is an expensive car.

Let's think about how to express and use approximate numbers.

1 Rounding

1 In the scale of 10 thousand, is the price of the car, 26300 kina, closer to 20 thousand kina or 30 thousand kina? How should we express it better?



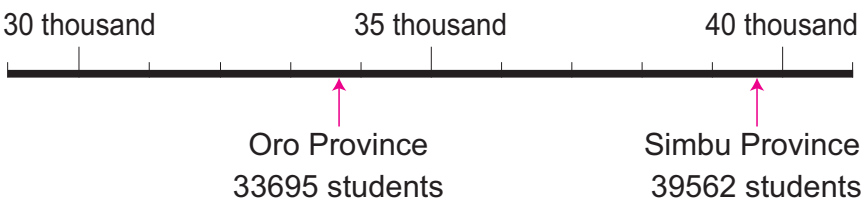
An approximate number is also called **round number**.
If a number is more or less than 30 thousand, it is said to be **about 30 thousand**.

2 The table below shows the total number of students for enrollment to Elementary schools for 3 provinces. About how many students are there in each province in terms of ten thousands?

	Madang Province	Simbu Province	Oro Province
Number of students	71238	39562	33695

Expressing Numbers as Round Numbers

3 Let's think about how to express the numbers of Elementary school students in **2** as round numbers in the ten thousands place value.



Which place value should we consider?

Expressing a Number as a Round Number

When we want to express a number as a round number to the nearest ten thousand, we have to look at the thousands place and the number on the right.

Because 3695 in 33695 is smaller than 5000, we can think of it as 0.

0000
33~~695~~ → **30000**
About 30 thousand

If the number in the thousands place is 0, 1, 2, 3, or 4 as less than 5 we can leave that number unchanged and replace the numbers to the right with 0000.

As 9562 in 39562 is larger than 5000, we can think of it as 10000.

10000
39~~562~~ → **40000**
About 40 thousand

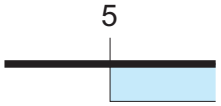
If the number in the thousands place is 5, 6, 7, 8, or 9 as greater than or equal to 5 we add 1 to the number in the ten thousands place and replace the numbers to the right with 0000.

The method shown above for expressing round numbers is called **rounding or round off**.

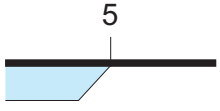
Greater than or equal to 5 means
"Just 5 or greater (larger or more) than 5."

Less than 5 means
"smaller than 5 and not equal to 5."

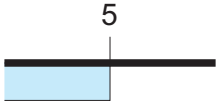
Less than or equal to 5 means
"Just 5 or smaller than 5."



Greater and equal to 5 includes 5.

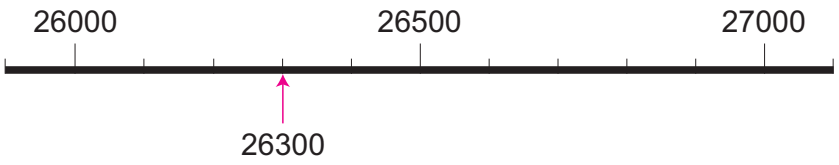


Less than 5 does not include 5.



Less and equal to 5 includes 5.

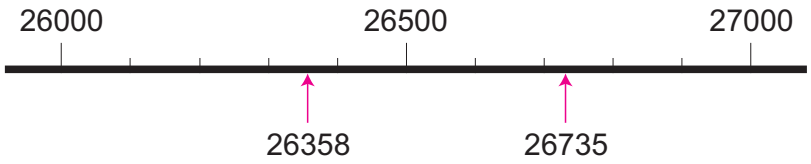
4 Let's show the price of the car, 26300 kina by rounding to the thousands place using the scale below.

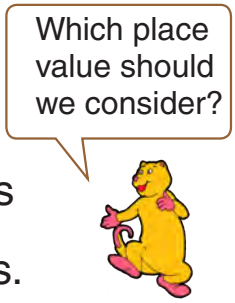


5 The enrollment for Primary schools in Hela and New Ireland Provinces are shown in the table.

Hela Province	26358 students
New Ireland Province	26735 students

1. What is the student population in ten thousand for each province?
2. What is the population in thousands for each province?



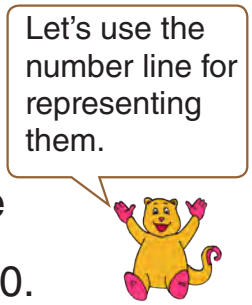


6 Let's consider the numbers whose round numbers are 2000 when rounding to the nearest thousands.

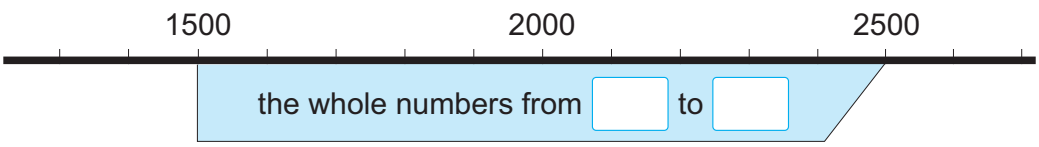
1. Round the following numbers to the nearest thousands.

   1350, 1499, 1500, 1502, 2001

   2499, 2500, 2501, 2570, 2608



2. Find the largest and the smallest numbers whose round numbers to the nearest thousands are 2000.

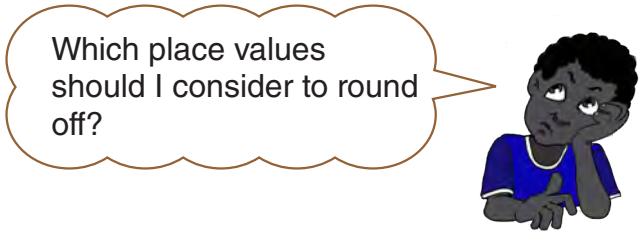


3. Let's express the range of numbers which can be 2000 after rounding by using the terms of "greater and equal to"and "less than".

7 Round the following numbers to the first place and second place from the largest place value. Let's think about which place value should we round and write the round number in the table below.

The first highest place
↓
7869
↑
The second highest place

	7869	4139	52630
Round number by the first highest place	8000		
Round number by the second highest place	7900		



Exercise

1 Let's round the following numbers to the nearest place value indicated below.

① 361 (Hundreds place)

② 4782 (Hundreds place)

③ 53472 (Thousands place)

④ 425000 (Ten thousands place)

2 Let's round the following numbers to the nearest ten thousands.

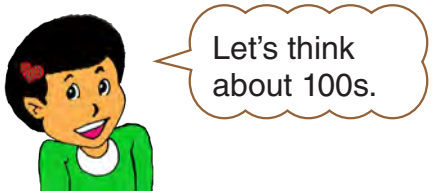
① 46719 ② 570814 ③ 458341

3 Fill in the ☐ with round numbers.

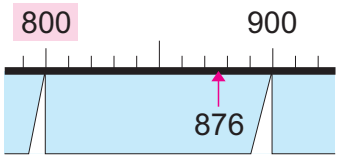
①The number rounded in the hundreds place become 34000 is larger than ☐ and smaller than ☐.

2 Rounding Up and Down

1 There are 876 sheets of papers. If bundling in 100 sheets, how many bundles can we have?

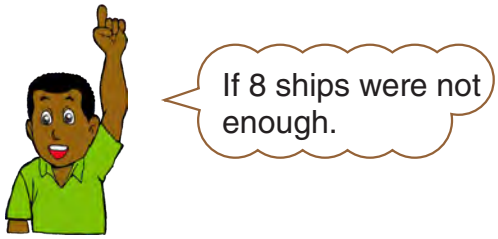


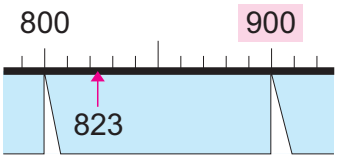
0 0
8 7 6



Here, we take down the numbers less than 100, it is called **rounding down** to the 100s place.

2 823 people went on a trip. One ship could take 100 people. How many ships are used?





9 0 0
8 2 3

Here, we consider the rest to add one more 100, it is called **rounding up** to the 100s place.

There are several ways to get to approximate numbers : **rounding numbers, rounding down numbers and rounding up numbers**.

Exercise

Let's get the second highest place number by rounding down.

Let's get the first highest place number by rounding up.

① 28138 ② 3699 ③ 42500 ④ 9810

3 Rough Estimates

2018 PNG Games, WNBP

1 The table on the right shows the number of spectators in the PNG Games in a day in 2018.

The Number of spectators in the PNG Games

Morning	2784
Afternoon	3428

1 About how many people in terms of thousands were spectators on that day?

Gawi's idea

I add the numbers of people in the morning and afternoon.
2784 + 3428 = 6212
I round the number to the nearest thousands and got 6000 spectators.

Vavi's idea

I round the numbers for the morning and afternoon to the nearest thousands.
2784 → 3000
3428 → 3000
Then I add the 2 numbers.
3000 + 3000 = 6000
(Spectators)

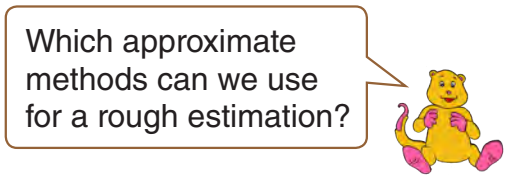
A number calculated by using round numbers is called **rough estimate**.

2 How many more people watched the games in the afternoon than in the morning, in terms of hundreds?

2 Primary school teachers in Madang Province will attend the EQUITV Project workshop together.
Their expected expenses are shown on the right. About how much money should they prepare?

Expenses

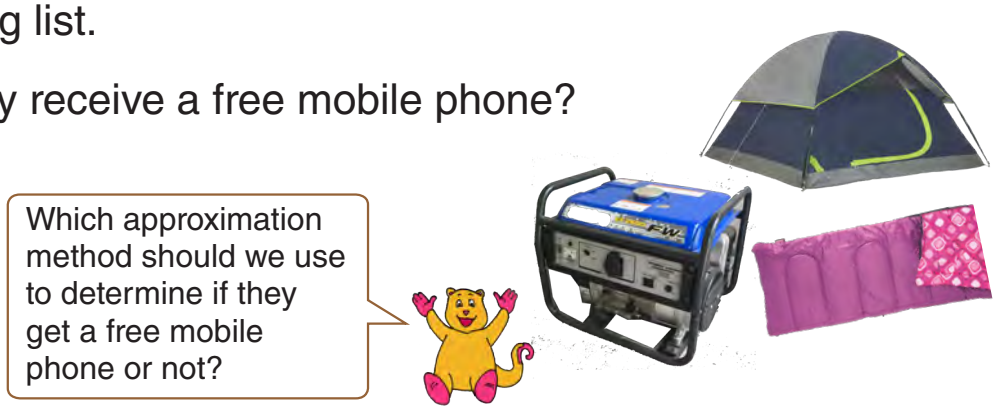
Item	Amount (Kina)
Transport	2960
Accomodation	2250
Meals	3800



3 Rose's family went shopping before going to the camp.
If they spend more than 1500 kina in the store, they can receive a free mobile phone.
The table on the right shows the shopping list.
Can they receive a free mobile phone?

Shopping List

Item	Amount (Kina)
Sleeping bag	128
Tent	150
Small generator	1320



4 315 women from Buka planned to go for a crusade in Rabaul.
Ship tickets cost 190 kina per person.
How much do they need for all the women in terms of ten thousands?
315×190

1 In order to approximate the cost, how should we consider 190 kina in terms of hundreds?
How should we consider 315 women in terms of hundreds?

2 Let's estimate the cost by approximating numbers.
We will approximate the number to the hundreds place.
$315 \times 190 \longrightarrow 300 \times 200$

3 Calculate 190×315 by using a calculator and compare your answer with the estimation.

3	1	5	×	1	9	0	=

Exercise

Let's estimate the product to the highest place value.

① 498×706 ② 2130×587

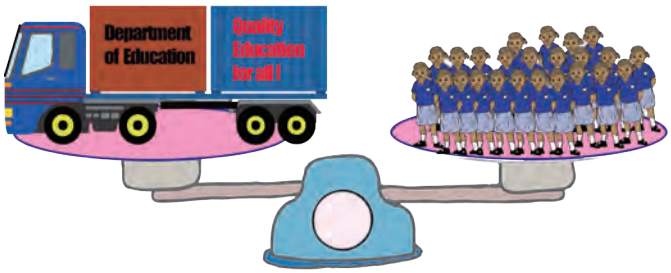
5 The weight of a semi-tralier is 6270 kg.

The weight of Ayaki is 38 kg.

By how many times is the weight of a semi-tralier to Ayaki's weight?

$6270 \div 38$

1 Estimate the size of the quotient by rounding the dividend and divisor to their highest places.



$$\begin{array}{ccc} 6000 & \div & 40 \\ \downarrow \div 10 & & \downarrow \div 10 \\ 600 & \div & 4 \end{array}$$

2 Calculate $6270 \div 38$ by calculator.

Exercise

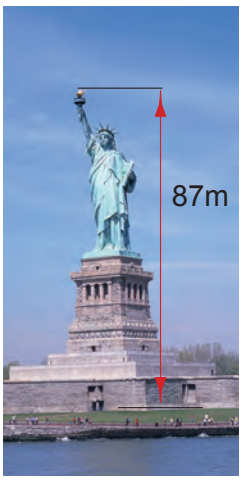
1 How many times is the Statue of Liberty in New York City to the radio tower?

2 Let's estimate the quotient.

① $37960 \div 78$

② $90135 \div 892$


27 m



87 m

Using Rounding Numbers

6 Jane's class discussed about the Malaria cases in PNG.

The table below shows the numbers of Malaria admissions for all ages in PNG.

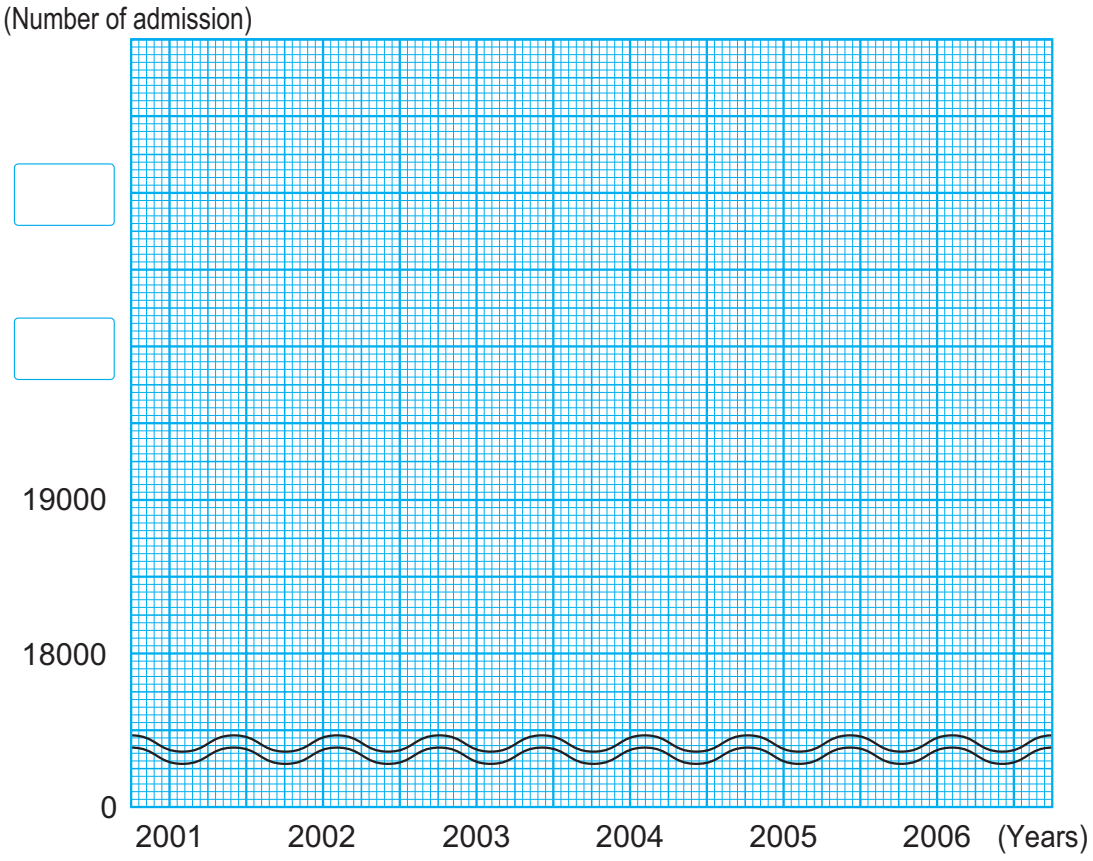
Let's draw a line graph.

The Number of Malaria admissions (all ages)

Years	Number of admission	Rounded Numbers (cases)
2001	18255	
2002	18398	
2003	18602	
2004	21701	
2005	19821	
2006	19030	

1. For drawing, let's round numbers to the nearest thousand on the table.
2. Let's identify the highest and lowest rounded number of cases.
3. Plot the rounded numbers and draw a line graph considering the scale.

The Number of Malaria admissions (all ages) in PNG



Exercise

1 Let's do the following rounding problems.

Pages 109 ~ 112

① Round the following numbers to the nearest ten thousands.

Ⓐ 47560 Ⓑ 623845 Ⓒ 284999

② Round the following numbers in the hundreds places to thousands.

Ⓐ 38500 Ⓑ 513291 Ⓒ 49781

③ Round the following numbers to the second highest place.

Ⓐ 67325 Ⓑ 748500 Ⓒ 195000

2 Answer the following questions.

Pages 110 ~ 113

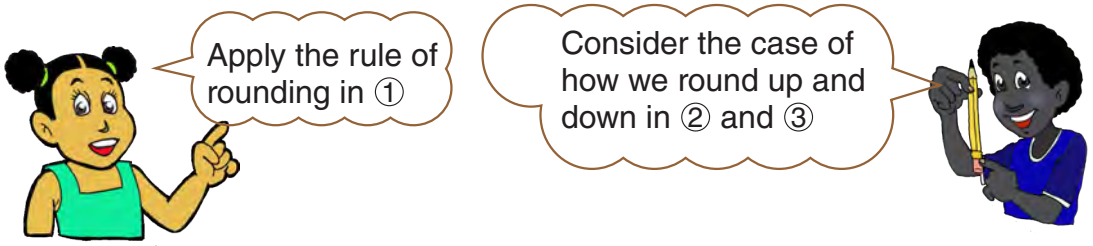
38478, 37400, 38573, 37501

38500, 37573, 38490, 37499

① Which numbers become 38000 when rounded to the nearest thousands?

② Which numbers become 37000 when rounded down to the nearest thousands?

③ Which numbers become 39000 when rounded up to the nearest thousands?



Problems

1 Are the following rounded numbers used correctly?

Tick the correct sentence.

● Understanding the appropriate ways of using rounded numbers.

① (　　) My math grade score was 68 points, so I can say it was about 100.

② (　　) The number of books in the school library is 8725, so we can say there are about 9000.

2 Round the following numbers to the nearest thousands.

And let's round them to the nearest ten thousands.

● Understanding how to express rounded numbers to a certain place.

① 36420　　② 43759　　③ 239500

3 Round the following numbers to the first highest places.

Then round them to the second highest places.

● Expressing round numbers based on given place value.

① 4586　　② 62175　　③ 832760

4 There are 789 kina. How many bundles can we make if we group the notes in 10 kina? What is the sum of the groups in kina?

● Understanding when to use rounding down.

5 When we rounded the number '85 □ 94' to the thousands, we got 85000.

● Finding the original numbers from a round number.

Which numbers 1 to 9 can we put in the □?

Let's find all possible numbers.