RESPONSIBILITIES OF THE YOUTH OF SOUTH AFRICA

Equity

Treat every person equally and fairly. Do not descriminate.



Human dignity

Respect everyone. Be kind and caring.



Life

All life is precious. Treat all life with respect.



Family

Honour and respect your parents. Be kind and loyal to your family.



Education

Attend school, learn and work hard. Adhere to the school's rules.



Work

Help your family with work in your home. Children must not be forced to get a job.



Freedom and security

Do not hurt, bully or intimidate others, and do not let others do so. Solve disagreements in a peaceful way.



Property

Respect the property of others. Do not damage property and do not steal.



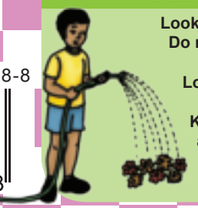
Religion, belief and opinion

Respect the beliefs and opinion of others.



Safety

Look after the earth. Do not waste water and electricity. Look after animal and plant life. Keep your home and community clean and safe.



Citizenship

Be a good and loyal South African citizen. Obey the laws, and ensure others do as well.



Freedom of expression

Do not spread lies and hatred. Ensure others are not insulted or have their feelings hurt.



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Rainbow WORKBOOKS

MATHEMATICS IN ENGLISH
GRADE 4 – BOOK 2
TERMS 3 & 4
ISBN 978-1-4315-0158-8

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7th Edition

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MATHEMATICS IN ENGLISH – Grade 4 Book 2

ISBN 978-1-4315-0158-8

Revised and CAPS aligned



Grade 4

MATHEMATICS IN ENGLISH

Book 2
Terms 3 & 4

Name:

Class:

basic education
Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

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Mrs Angie Motshekga,
Minister of
Basic Education



Mr Enver Surty,
Deputy Minister of
Basic Education

These workbooks have been developed for the children of South Africa under the leadership of the Minister of Basic Education, Mrs Angie Motshekga, and the Deputy Minister of Basic Education, Mr Enver Surty.

The Rainbow Workbooks form part of the Department of Basic Education's range of interventions aimed at improving the performance of South African learners in the first six grades. As one of the priorities of the Government's Plan of Action, this project has been made possible by the generous funding of the National Treasury. This has enabled the Department to make these workbooks, in all the official languages, available at no cost.

We hope that teachers will find these workbooks useful in their everyday teaching and in ensuring that their learners cover the curriculum. We have taken care to guide the teacher through each of the activities by the inclusion of icons that indicate what it is that the learner should do.

We sincerely hope that children will enjoy working through the book as they grow and learn, and that you, the teacher, will share their pleasure.

We wish you and your learners every success in using these workbooks.

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Author team: Blom, L., Tshabalala, L., Aitchison J.J.W

Rainbow WORKBOOKS

Grade 4

Mathematics

PART 3

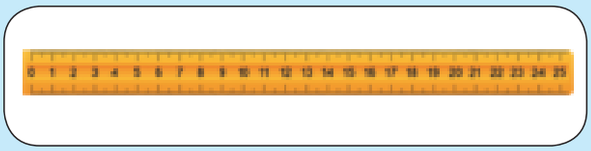
WORKSHEETS 65 to 144

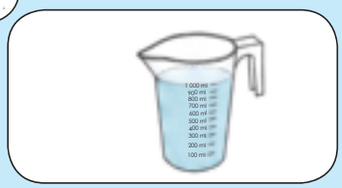
ENGLISH Book 2

Name:

65 Capacity

Which measuring instrument will you use to measure volume?



1. Colour the measuring cups that will make 1 litre

a. 1 ℓ → 200 ml, 100 ml, 200 ml, 500 ml, 100 ml

b. 1 ℓ → 150 ml, 250 ml, 350 ml, 500 ml, 50 ml

c. 1 ℓ → 125 ml, 250 ml, 100 ml, 500 ml, 125 ml

d. 1 ℓ → 100 ml, 300 ml, 200 ml, 400 ml, 100 ml

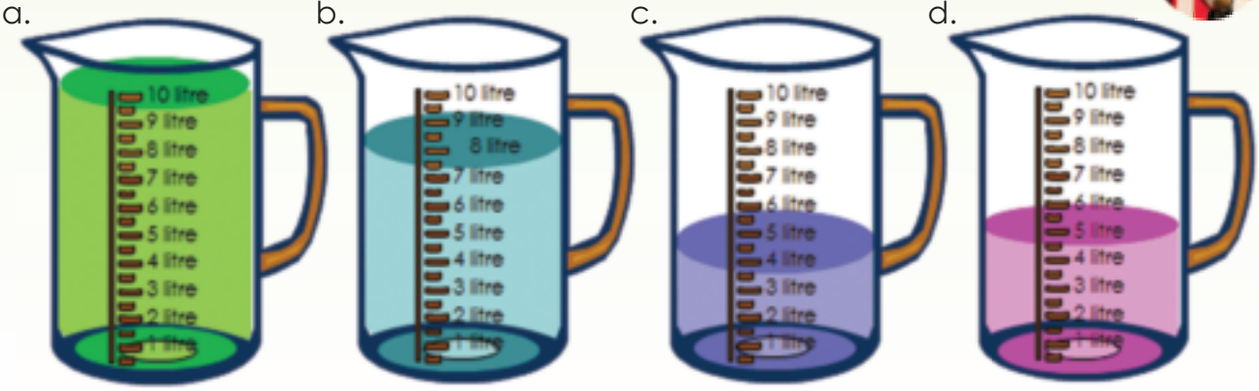
e. 1 ℓ → 50 ml, 100 ml, 125 ml, 275 ml, 950 ml

Think carefully when you look at these diagrams in Question 2. Remember 0 litres (empty) is the bottom of the jug. What mark is next to the liquid level? In the first one it is the mark between the 9 and 10 litre marks - so it is 9 $\frac{1}{2}$ litres or 9 litres and 500 ml.



2. How much cool drink is in the measuring jug?

a. b. c. d.



a.	b.	c.	d.
$9\frac{1}{2}$ ℓ			

3. Will you use ml or ℓ to measure the following?



The jug holds 1 ℓ.

a. 

b. 

c. 

d. 

e. 

f. 

4. A teaspoonful (or teaspoon) is a unit of capacity used in cooking and medicine.

a) How many ml does a teaspoonful hold?

b) How may teaspoonfuls will 20 ml be?



5. Waseela used 2 ℓ of water for making tea and coffee and 60 ℓ of water for doing her washing and 3 ℓ of water for washing dishes. How much water did she use altogether?

Millilitre fun

Collect some newspapers or junk mail.

Find 10 items for which measurements are given in ml.



Sign:

Date:

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

66a More capacity

Term 3

Look at the pictures and answer the questions below. Note that the pictures are not to the same scale.



1. **Which container do you think contains the largest amount of liquid?**

2. **Which container do you think contains the smallest amount of liquid?**

3. **What is the purpose of these containers?**

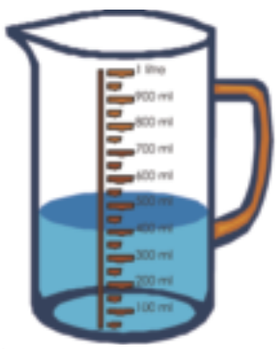
4. **Fill in the missing information.**

a.



Capacity of jug: 4 litres
Volume of liquid: 4 litres

b.



Capacity: _____
Volume: _____

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

c.



Capacity: _____

Volume: _____

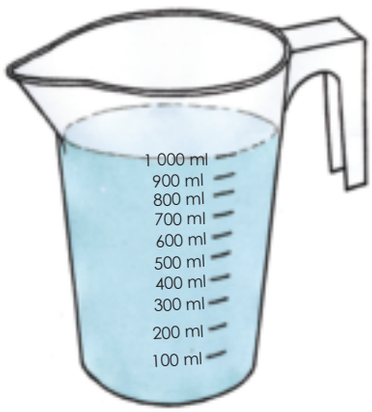
d.



Capacity: _____

Volume: _____

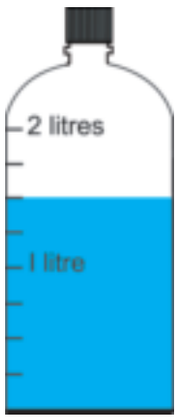
e.



Capacity: _____

Volume: _____

f.



Capacity: _____

Volume: _____

5. Answer the questions below:

a. What is capacity?

b. What is volume?

Sign:

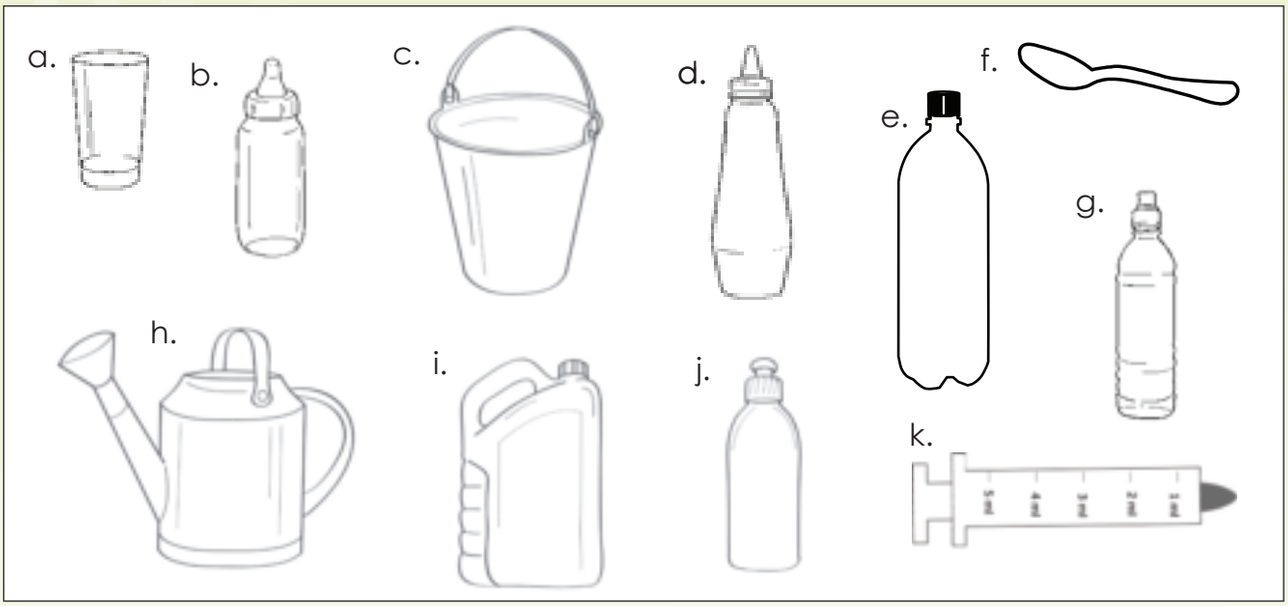
Date:

continued

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

More capacity continued

6. Sort the containers into two groups: the ones you will use to measure litres and the ones you will use to measure millilitres. Write the alphabet letter only.



Millilitres	Litres

7. What measuring unit will you use to measure:

a. Milk for a pudding recipe	b. Water to fill a swimming pool	c. Water to mix a packet of powdered cool drink
d. Glass of water	e. Medicine for a baby	f. Water to water your garden

8. Cut out pictures from magazines, newspapers and advertisements. Paste two or three pictures of each:

Containers that hold litres	Containers that hold millilitres

Filling the pool

A swimming pool holds 1 500 ℓ of water. How many 50 ℓ buckets of water will you use to fill the pool?

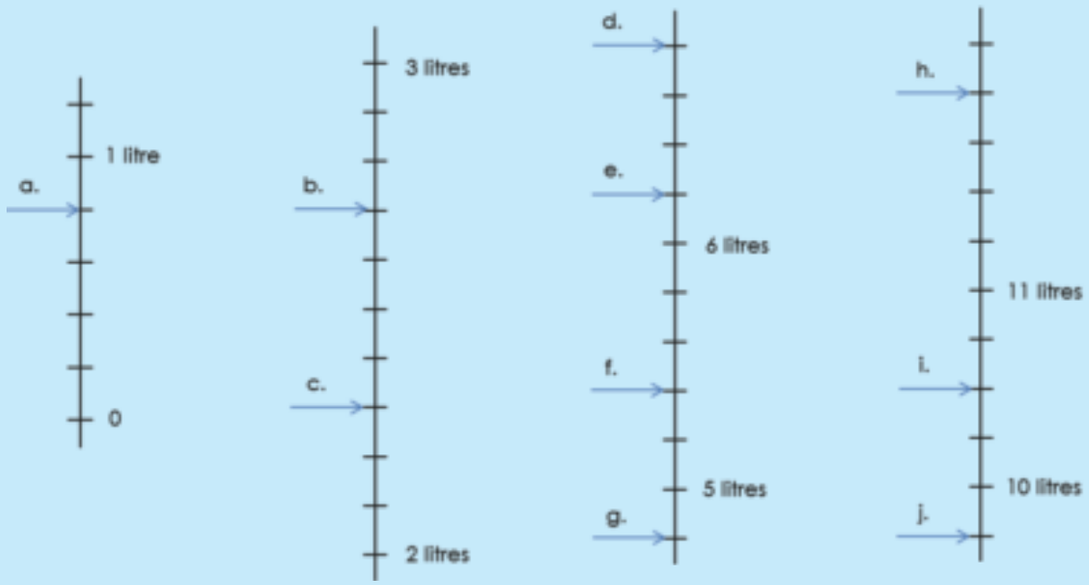
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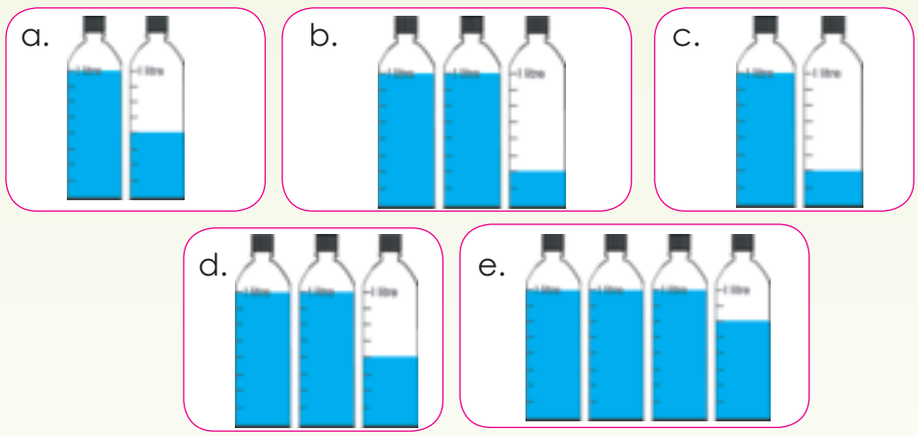
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

67a Even more capacity

Give the correct reading for each arrow.



1. These 1 litre bottles contain cool drink. Answer the questions.



i. What is the capacity of each set of bottles?

a. _____ b. _____ c. _____ d. _____ e. _____

ii. How much cooldrink is there?

Litres	Millilitres	Litres and millilitres	Fraction
a. 1 ℓ	500 ml	1 ℓ 500 ml	$1\frac{1}{2}$ ℓ
b.			
c.			
d.			
e.			

2. Complete the following table.

Litres	Millilitres		Litres and millilitres
1 ℓ	350 ml	=	
		=	3 ℓ 80 ml
2 ℓ		=	2 ℓ 755 ml
		=	6 ℓ 5 ml
5 ℓ	65 ml	=	

3. Write the following as litres only (Remember you will need to round off to the nearest litre.)

Example: 1 876 ml ≈ 2 ℓ

a. 3 546 ml

b. 2 876 ml

c. 9 234 ml

d. 6 127 ml

e. 8 750 ml

f. 9 500 ml

4. Write the following as millilitres only.

a. 4 ℓ 648 ml

4 648 ml

b. 6 ℓ 394 ml

c. 8 ℓ 732 ml

c. 8 ℓ 732 ml

e. 7 ℓ 912 ml

f. 1 ℓ 500 ml

5. Write the following as litres and millilitres.

a. 1 543 ml

b. 2 876 ml

c. 9 234 ml

d. 6 567 ml

e. 8 799 ml

f. 7 500 ml

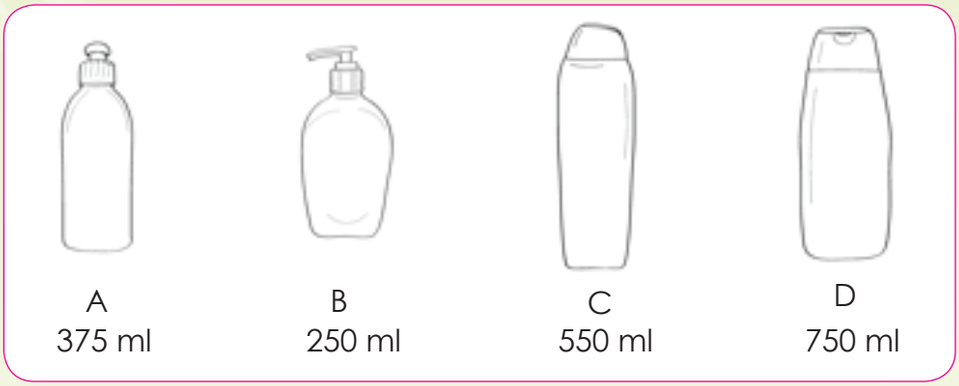
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continued

Even more capacity continued

6. Look at the containers carefully and answer the question below.



A	B	C	D
375 ml	250 ml	550 ml	750 ml

Use the letters A , B, C and D to arrange the containers from the one that holds the least to the one that holds the most.

7. Solve the following problems:

a. Thabo mixes two 1 ℓ bottles of orange juice with two 750 ml bottles of apple juice and two 1 $\frac{1}{2}$ ℓ bottles of lemonade. How many litres of the mixture will there be?



b. Rosie has a bad cough. Her mother buys a 225 ml bottle of cough syrup, of which she drinks 45 ml a day. How long will the bottle last?

c. Dumisani wants to make juice for his soccer team. He mixes a 2 litre bottle of orange juice with four 2 litre bottles of water. How many litres of juice has he made?

d. Sharon used 2 litres of water for making tea and coffee, 50 litres of water for doing washing and 22 litres of water in her garden. How much water did she use altogether?

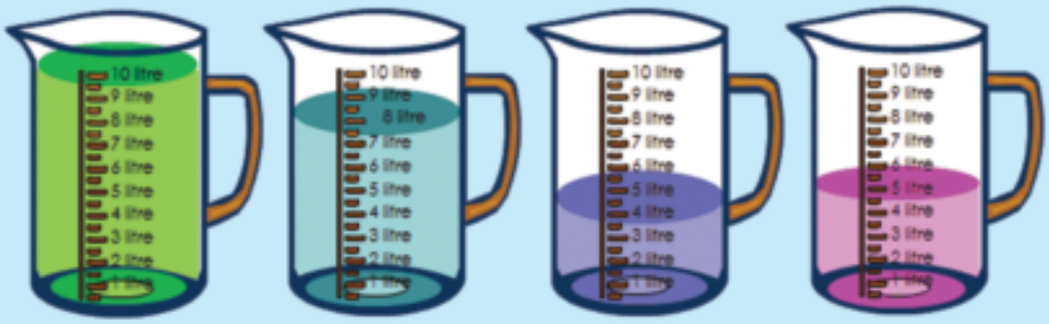
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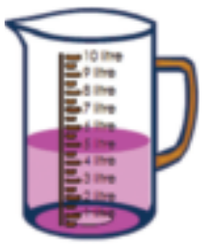
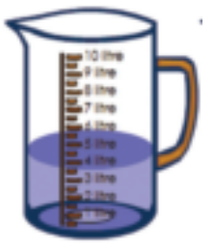
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Capacity, mass and fractions

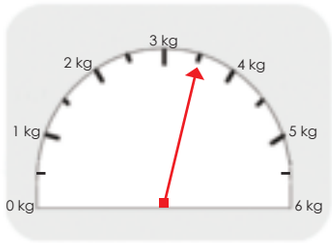
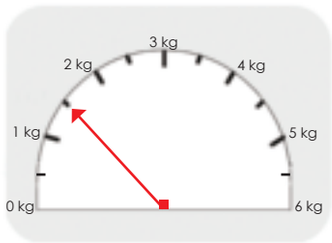
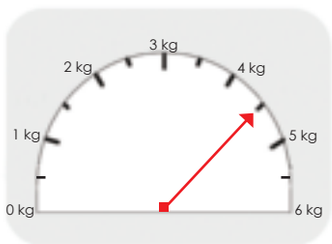
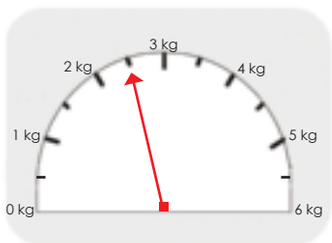
How much cool drink is in each jug?



1. Read the measuring jug and complete the table.

	How many litres are there in the jug?	Fraction	Number of 500 ml units
a. 	4 litres 500 ml	$4\frac{1}{2}$ litre	9
Count	$0, \frac{1}{2}, 1, 1\frac{1}{2}, 2, 2\frac{1}{2}, 3, 3\frac{1}{2}, 4, 4\frac{1}{2}$		
b. 			
Count			
c. 			
Count			
d. 			
Count			

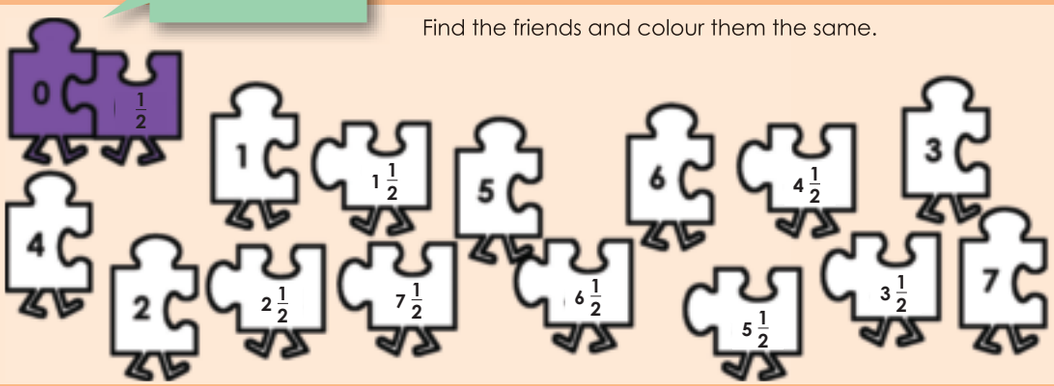
2. Complete the table:

	How many kilograms?	Fraction	How many 500 g units
	3 kg 500 g	$3\frac{1}{2}$ kg	7
	Count	$0, \frac{1}{2}, 1, 1\frac{1}{2}, 2, 2\frac{1}{2}, 3, 3\frac{1}{2}$	
			
	Count		
			
	Count		
			
	Count		

Find the friends …

We are friends

Find the friends and colour them the same.



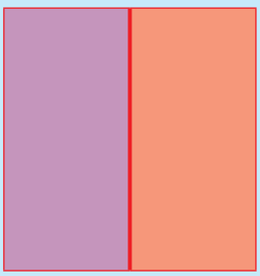
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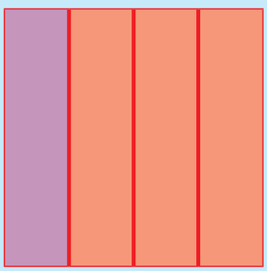
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69 Equivalent fractions

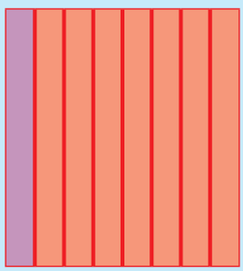
Look at the fractions. Talk about them.



Halves



Quarters



Eighths

1. Write an equivalent fraction for:

a. $\frac{1}{4} = \square$ b. $\frac{1}{2} = \square$ c. $\frac{6}{8} = \square$

d. $\frac{2}{4} = \square$ e. $\frac{2}{2} = \square$ f. $\frac{2}{8} = \square$

g. $\frac{8}{8} = \square$ h. $\frac{4}{8} = \square$ i. $\frac{4}{4} = \square$

2. Fill in <, > or =.

a. $\frac{1}{2} \square \frac{1}{4}$ b. $\frac{1}{2} \square \frac{2}{8}$ c. $\frac{1}{4} \square \frac{3}{8}$

d. $\frac{1}{2} \square \frac{2}{4}$ e. $\frac{2}{2} \square \frac{1}{8}$ f. $\frac{5}{8} \square \frac{2}{4}$

g. $\frac{2}{4} \square \frac{8}{8}$ h. $\frac{1}{4} \square \frac{4}{8}$ i. $\frac{4}{8} \square \frac{1}{2}$

j. $\frac{1}{2} \square \frac{4}{4}$ k. $\frac{1}{2} \square \frac{1}{8}$ l. $\frac{5}{8} \square \frac{1}{2}$

m. $\frac{1}{2} \square \frac{7}{8}$ n. $\frac{3}{4} \square \frac{1}{8}$ o. $\frac{1}{4} \square \frac{6}{8}$



3. Complete the following using the diagram to guide you:

a. One whole = $\frac{1}{2}$ + ☐



b. One whole = $\frac{1}{4}$ + ☐



c. One whole = $\frac{1}{8}$ + ☐



4. Draw a picture to solve the following:

Palesa had 1 quarter of the cake, and July had 2 eighths of the cake. Who had the most cake?

John had four eighths of the cool drink and Ben had half of the cool drink. Did they have the same amount of cool drink?

Fractions in circles

Divide the circle into eighths.



Show one quarter of the circle.

Show one half of the circle.

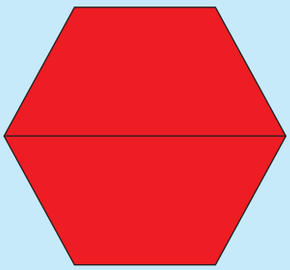
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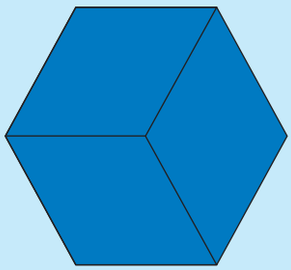
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70 More equivalent fractions

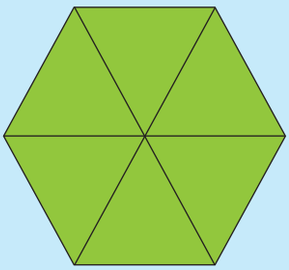
Look at the fractions. Talk about them.



Halves



Thirds



Sixths

1. Write an equavilent fraction for each of the following.

a. $\frac{1}{2} = \square$ b. $\frac{2}{6} = \square$ c. $\frac{4}{6} = \square$

d. $\frac{1}{3} = \square$ e. $\frac{2}{2} = \square$ f. $\frac{3}{6} = \square$

g. $\frac{2}{3} = \square$ h. $\frac{6}{6} = \square$ i. $\frac{3}{3} = \square$

2. Fill in <, > or =.

a. $\frac{1}{2} \square \frac{1}{3}$ b. $\frac{1}{2} \square \frac{2}{6}$ c. $\frac{1}{3} \square \frac{3}{6}$

d. $\frac{1}{2} \square \frac{2}{3}$ e. $\frac{2}{3} \square \frac{1}{6}$ f. $\frac{5}{6} \square \frac{2}{3}$

g. $\frac{2}{3} \square \frac{6}{6}$ h. $\frac{1}{3} \square \frac{4}{6}$ i. $\frac{4}{6} \square \frac{1}{2}$

j. $\frac{1}{2} \square \frac{3}{3}$ k. $\frac{1}{2} \square \frac{1}{6}$ l. $\frac{5}{6} \square \frac{1}{2}$



3. Complete the following using the diagram to help you:

a. One whole = $\frac{1}{2}$ + ☐



b. One whole = $\frac{1}{3}$ + ☐

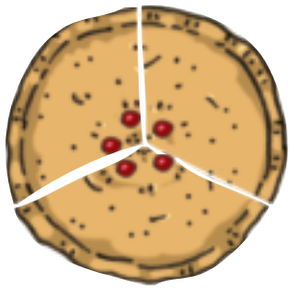


c. One whole = $\frac{1}{6}$ = ☐



4. Write a word problem for each and solve it.

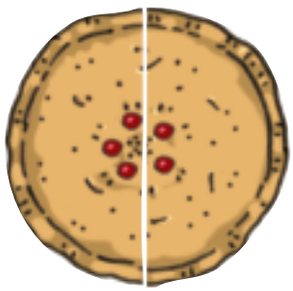
a.



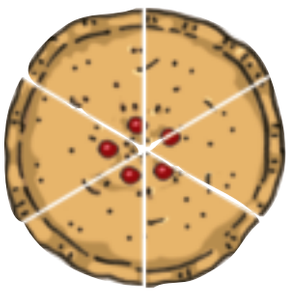
Mother shared the apple pie between myself, herself and my father. What fraction did we each get?

$1 \div 3 = \frac{1}{3}$

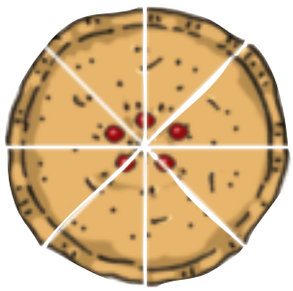
b.



c.



d.



Thinking fractions

Three children have to share 12 oranges equally so that nothing remains.
How many oranges will each child get?

You might need to make a drawing to help you to solve this.

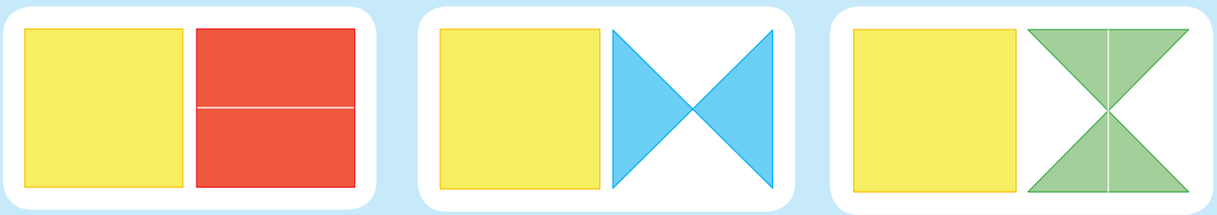
Sign:

Date:

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

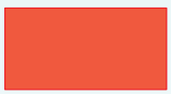
71 Even more equivalent fractions

Talk about these yellow whole squares and the fractions.



1. Use two yellow squares as the whole.  **= 1 whole**

a. The yellow square  is what part of the whole? ☐

b. The red rectangle  is what part of the whole? ☐

c. The blue triangle  is what part of the whole? ☐

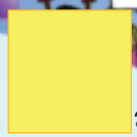
d. The green triangle  is what part of the whole? ☐

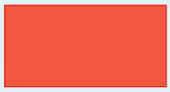
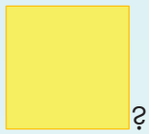
2. Answer these questions.

a. How many green triangles  are in one blue triangle  ? ☐

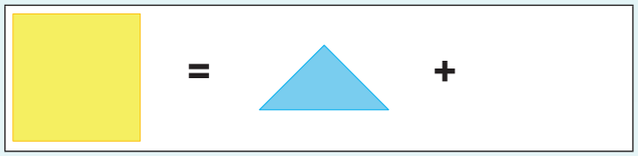
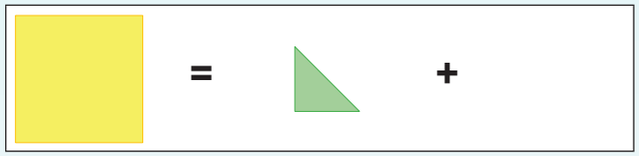
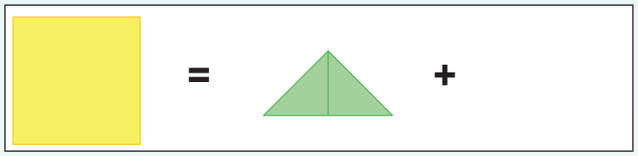
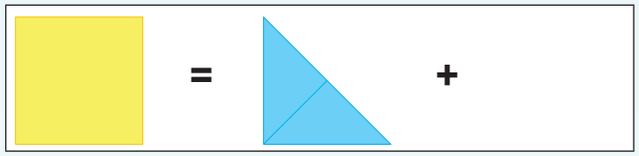
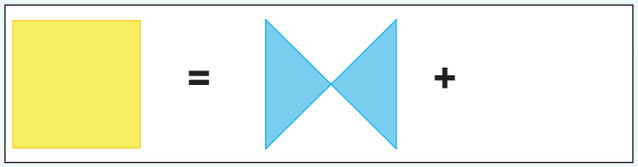
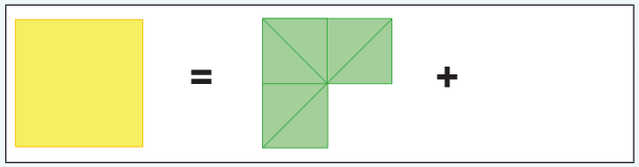
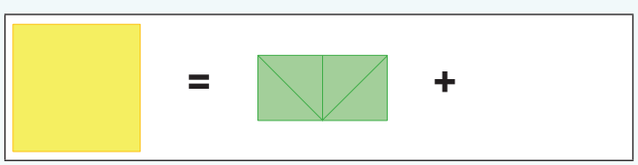
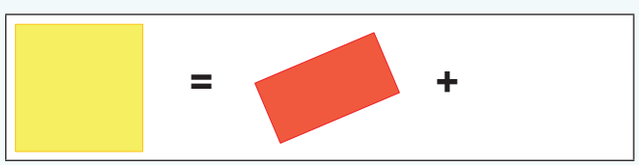
b. How many green triangles  are in one red rectangle  ? ☐

c. How many green triangles  are in one yellow square  ? ☐

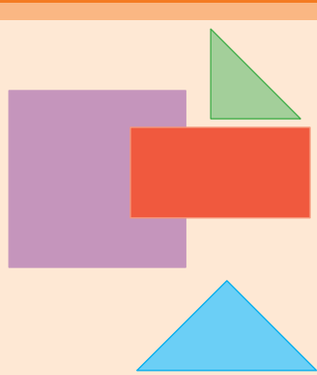
d. How many blue triangles  are in one yellow square  ? ☐

e. How many red rectangles  are in one yellow square  ? ☐

3. Draw the missing fraction pieces.

Make my own sums



Make five of your own sums using the shapes on the left.

☐ ☐

☐ ☐

☐

Sign:

Date:

72 Comparing, ordering and adding fractions

What fraction of the diagrams below has been coloured?
What fraction of the diagrams below has not been coloured?



1. Fill in > , < or = .

a. $\frac{1}{3}$, $\frac{1}{4}$ — $\frac{1}{3} \square \frac{1}{4}$

b. $\frac{1}{5}$, $\frac{1}{5}$, $\frac{1}{2}$ — $\frac{2}{5} \square \frac{1}{2}$

c. $\frac{1}{7}$, $\frac{1}{7}$, $\frac{1}{7}$, $\frac{1}{7}$, $\frac{1}{5}$, $\frac{1}{5}$ — $\frac{4}{7} \square \frac{2}{5}$

d. $\frac{1}{6}$, $\frac{1}{6}$, $\frac{1}{6}$, $\frac{1}{2}$ — $\frac{3}{6} \square \frac{1}{2}$

e. $\frac{1}{8}$, $\frac{1}{8}$, $\frac{1}{4}$ — $\frac{2}{8} \square \frac{1}{4}$

f. $\frac{1}{3}$, $\frac{1}{5}$, $\frac{1}{5}$ — $\frac{1}{3} \square \frac{2}{5}$

2. What fractions are shown by the arrow?

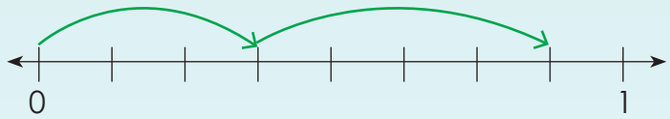
a. 0 — 1 ☐

b. 1 — 2 ☐

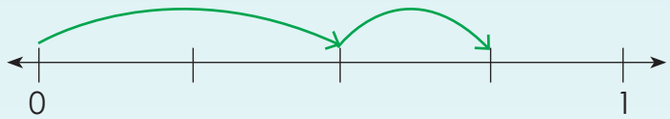
c. 4 — 5 ☐

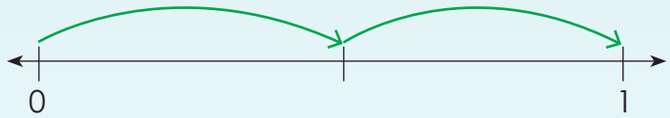
d. 5 — 6 ☐

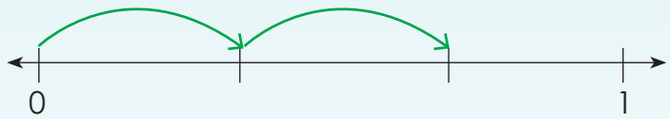
3. Write a sum for the number lines below and calculate the answers.

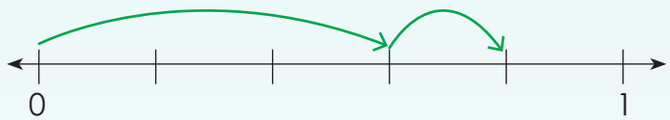
a. 

$\frac{3}{8} + \frac{4}{8} = \frac{7}{8}$

b. 

c. 

d. 

e. 

4. Draw number lines for the following sums.

a. $\frac{1}{4} + \frac{2}{4} =$



b. $\frac{1}{2} + \frac{1}{4} =$



Problem solving:

A chocolate cake is cut into 30 pieces. If a fifth has been eaten, how many pieces are left?

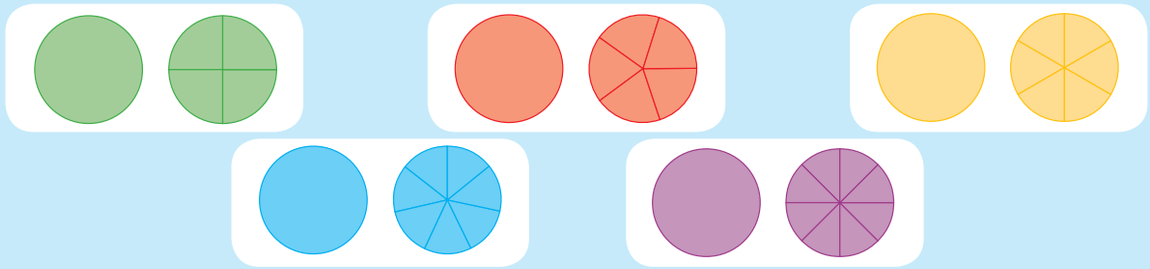
Sign:

Date:

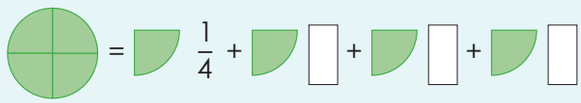
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

73 Addition of fractions

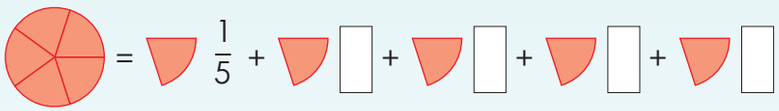
Talk about these fraction circles.



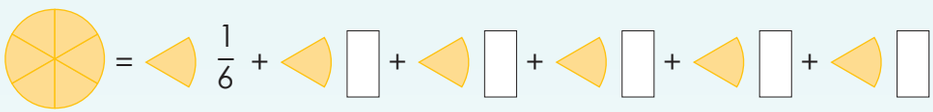
1. Write a sum for the following:



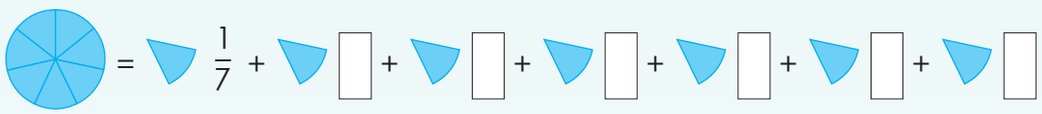
= $\frac{1}{4}$ + ☐ + ☐ + ☐



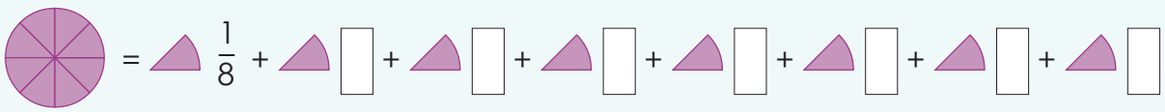
= $\frac{1}{5}$ + ☐ + ☐ + ☐ + ☐



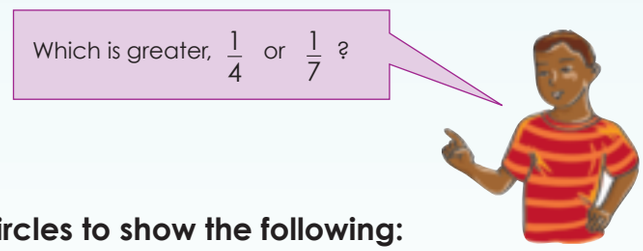
= $\frac{1}{6}$ + ☐ + ☐ + ☐ + ☐ + ☐



= $\frac{1}{7}$ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐



= $\frac{1}{8}$ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐

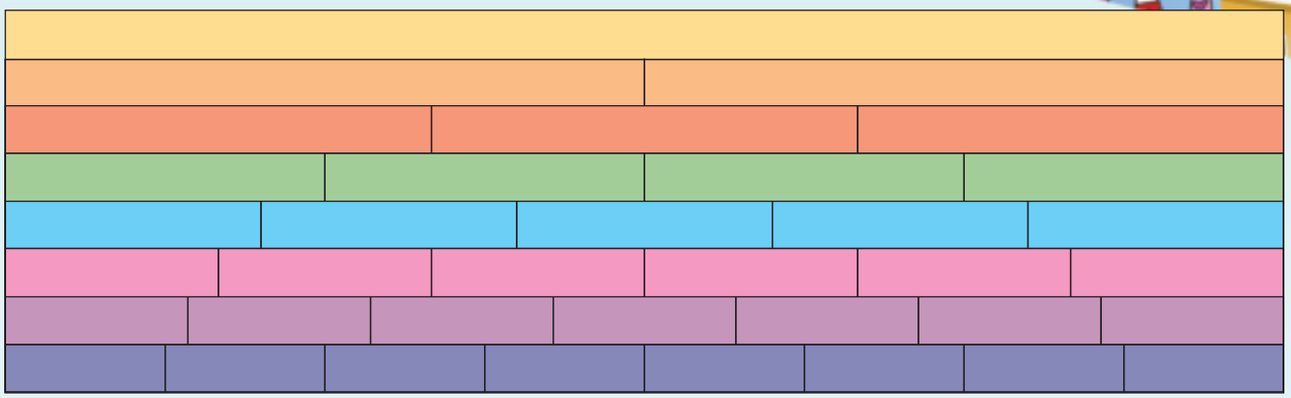


2. Challenge: Draw fraction circles to show the following:

a. $\frac{1}{4} + \frac{1}{4} + \frac{1}{2}$ = 1 whole

b. $\frac{1}{3} + \frac{1}{3} + \frac{2}{6}$ = 1 whole

3. Use the diagram to complete the sums.



a. $\frac{1}{4} + \frac{2}{4} = \square$

b. $\frac{2}{5} + \frac{1}{5} = \square$

c. $\frac{3}{8} + \frac{2}{8} = \square$

d. $\frac{1}{6} + \frac{2}{6} = \square$

e. $\frac{3}{7} + \frac{2}{7} = \square$

f. $\frac{5}{8} + \frac{1}{8} = \square$

g. $\frac{4}{8} + \frac{3}{8} = \square$

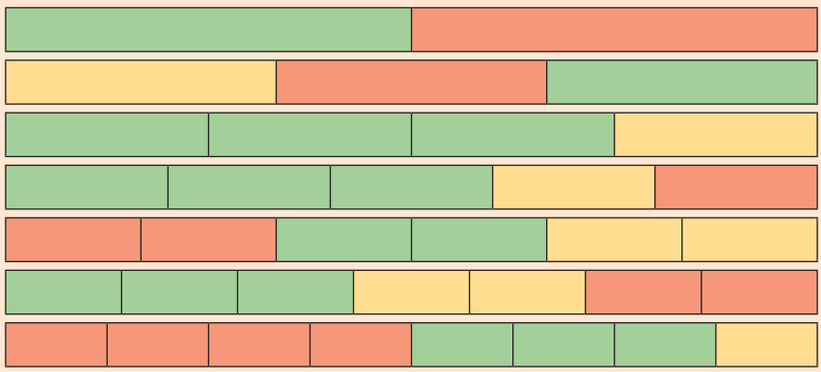
h. $\frac{3}{5} + \frac{2}{5} = \square$

i. $\frac{1}{6} + \frac{4}{6} = \square$

4. At the party I had $\frac{1}{8}$ of the cake and my friend had $\frac{3}{8}$. How much cake did we have altogether? Make a drawing to show your answer.

Fraction fun

Make seven sums using the colours on each fraction strip.

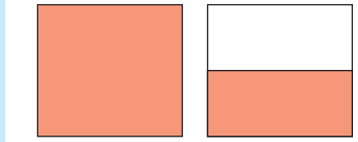


Sign:

Date:

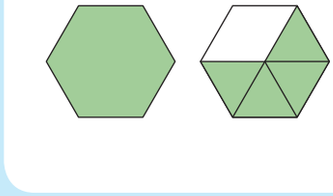
74 More addition of fractions

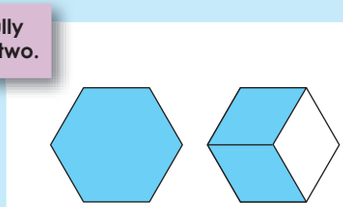
What is each picture telling you?





Think carefully with the next two.

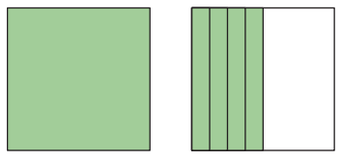


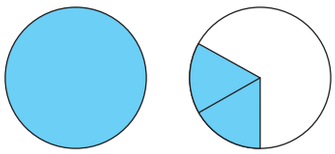


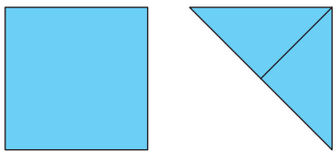


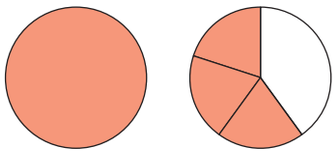
We say that these are mixed numbers.

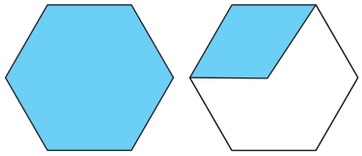
1. Write the following as mixed numbers:

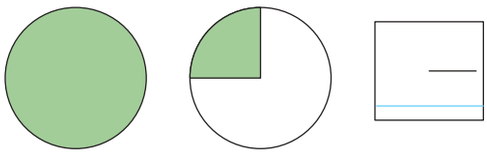
a.  $1\frac{4}{8}$

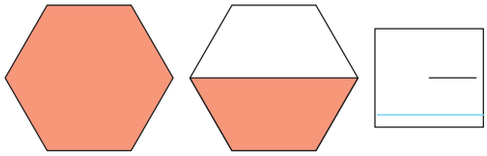
b.  ___

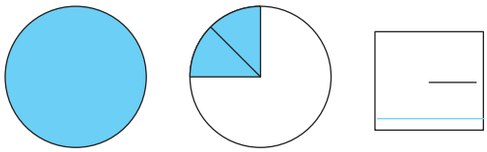
c.  ___

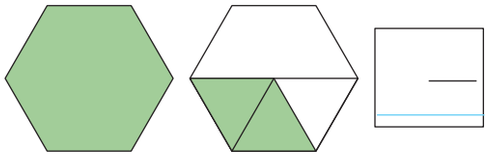
d.  ___

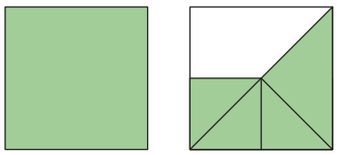
e.  ___

f.  ___

g.  ___

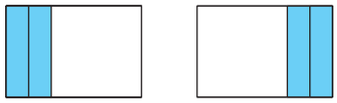
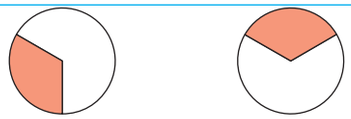
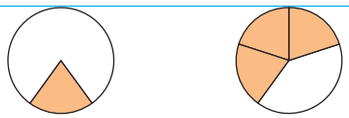
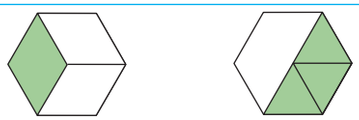
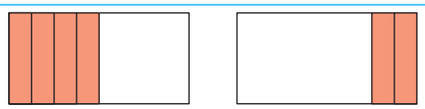
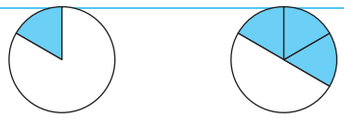
h.  ___

i.  ___

j.  ___



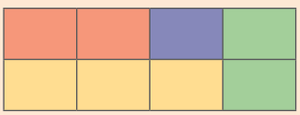
2. Calculate the following.

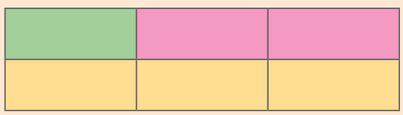
a.		$\frac{2}{6} + \frac{2}{6} = \square$
b.		$\frac{1}{3} + \frac{1}{3} = \square$
c.		$\frac{1}{3} + \frac{1}{3} = \square$
d.		$\frac{2}{4} + \frac{1}{4} = \square$
e.		$\frac{1}{4} + \frac{2}{4} = \square$
f.		$\frac{1}{5} + \frac{3}{5} = \square$
g.		$\frac{2}{6} + \frac{3}{6} = \square$
h.		$\frac{4}{8} + \frac{2}{8} = \square$
i.		$\frac{1}{6} + \frac{3}{6} = \square$
j.		$\frac{3}{8} + \frac{2}{8} = \square$



Thinking fractions

Make a sum for each diagram.





Sign:

Date:

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

75 Fraction problems



1. Colour the following on the picture above:

a. One quarter of the red window.
b. Two quarters of the purple window.
c. Three quarters of the orange window.
d. One quarter plus one quarter of the green window.
e. Two quarters plus one quarter of the yellow window.
f. Two quarters plus two quarters of the brown window.
g. One fifth of the first tree light green and the rest dark green.
h. Two fifths of the second tree light green and the rest dark green.
i. One fifth of the third tree light green, two fifths dark green and the rest yellow.
j. Three fifths of the fourth tree green and the rest yellow.
k. Colour the fifth tree and explain it here.

2. Look at the train in the picture on the previous page and answer the following:

a. How many passenger carriages does the train have? ____

b. What fraction is yellow? ____ Orange? ____ Red? ____

c. The wheels are divided into ____ parts. Write one part as a fraction. ____

d. Each passenger carriage has ____ windows. Write one window as a fraction. ____

e. Colour in two sixths of the yellow carriage windows, four sixths of the orange carriage windows, five sixths of the red carriage windows.

3. Answer the questions on the small trucks.

a. How many boxes are on the blue truck? ____ What fraction is yellow? ____ What fraction is blue? ____ What fraction is brown? ____

Write an addition sum for it: ____

b. How many boxes are on the red truck? ____

What fraction is pink? ____ What fraction is blue? ____

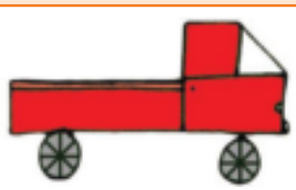
What fraction is brown? ____

Write an addition sum for it? ____

My own questions

Look at the pictures and make your own fraction questions. Remember it should be different from the questions in this worksheet.





There is an open space on the picture on the previous page (page 26). Draw something that will fit into the picture and then write a fraction question for it.

Sign:

Date:

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

76 Numbers 0 – 5 000

Read the comic strip.



1. Find items advertised for about R4 000. Paste a picture here.

2. Calculate:

a. 1 000 + 500 + 90 + 3 = _____

b. 2 000 + 300 + 40 + 1 = _____

c. 3 000 + 800 + 20 + 9 = _____

d. 4 000 + 90 + 3 = _____

e. 4 000 + 700 = _____

3. Calculate the following:

a. 2 000 + 600 + 30 + 9 =

b. 4 000 + 50 + 1 + 400 =

c. 2 + 90 + 800 + 1 000 =

d. 4 000 + 50 =

e. 2 000 + 2 =

4. Change the digit 5 to zero in each number. Show your operation.

a. 4 854 =

b. 3 521 =

c. 2 005 =

d. 6 050 =

e. 5 000 =

5. Use any digits to make different 4-digit numbers smaller than 5 000 but bigger than 2 000. Say if the number is odd or even. We did the first one for you

a. 4 789 odd

b.

c.

d.

e.



6. Write your answers to question 5 from the biggest to the smallest number.

Number madness

Take a newspaper. Find some 4-digit numbers that are bigger than 2 000 but smaller than 5 000. Paste them here.



Sign:

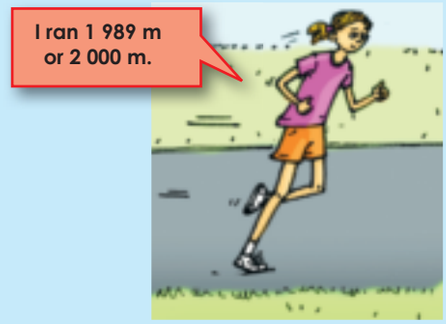
Date:

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

77 Rounding off to the nearest 1 000

Which would be easier to say?







1. Between what two thousands are:

a.	1 234			b.	3 890		
c.	2 478			d.	8 932		
e.	4 329			f.	9 323		
g.	6 173			h.	5 984		
i.	7 394						

2. Give any number between.

a.	2 000 and 3 000		b.	4 000 and 5 000	
c.	3 000 and 4 000		d.	8 000 and 9 000	
e.	1 000 and 2 000		f.	5 000 and 6 000	
g.	6 000 and 7 000		h.	7 000 and 8 000	

3. Go back to the numbers you wrote in question 2. Underline the number that is closest to your answer.

Example:

2 000 and 3 000 | 2 387

4. Round off to the nearest 1 000. Circle the number which you look at when deciding whether to round up or down to the nearest 1 000. Complete the sentences.

a. 2 (1)00 is between 2 000 and 3 000 and would be rounded to 2 000.

b. 3 400 is between _____ and _____ and would be rounded to _____.

c. 1 900 is between _____ and _____ and would be rounded to _____.

d. 4 700 is between _____ and _____ and would be rounded to _____.

5. Round off to the nearest 1 000. Circle the number which you look at when deciding whether to round up or down to the nearest 1 000. Complete the sentences.

a. 2 (1)50 is between 2 000 and 3 000 and would be rounded to 2 000.

b. 4 490 is between _____ and _____ and would be rounded to _____.

c. 3 680 is between _____ and _____ and would be rounded to _____.

d. 1 450 is between _____ and _____ and would be rounded to _____.

6. Round off to the nearest 1 000. Circle the number which you look at when deciding whether to round up or down to the nearest 1 000. Complete the sentences.

a. 3 (4)12 is between 3 000 and 4 000 and would be rounded to 3 000.

b. 2 623 is between _____ and _____ and would be rounded to _____.

c. 4 499 is between _____ and _____ and would be rounded to _____.

d. 1 507 is between _____ and _____ and would be rounded to _____.

Maths artist



You want to explain to your friend, who was absent from school, what rounding off means.
Make a drawing.

Sign:

Date:

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

78a Addition and subtraction up to 4-digit numbers: breaking down numbers

How fast can you calculate the following?

7 000 + 300 + 40 + 6 = ☐

9 000 + 80 + 2 = ☐

4 000 + 90 + 3 = ☐

5 000 + 4 = ☐

8 000 + 100 + 7 = ☐

6 000 + 200 + 80 + 5 = ☐

1. Write the following in expanded notation.

a. 1 256 ☐

b. 8 105 ☐

c. 5 085 ☐

d. 9 450 ☐

e. 6 001 ☐

f. 8 020 ☐

2. Calculate the following.

a. 5 + 7 = ☐

b. 50 + 70 = ☐

c. 500 + 700 = ☐

d. 4 + 9 = ☐

e. 40 + 90 = ☐

f. 400 + 900 = ☐

g. 6 + 7 = ☐

h. 60 + 70 = ☐

i. 600 + 700 = ☐

3. Calculate the following.

a. 9 – 4 = ☐

b. 90 – 40 = ☐

c. 900 – 400 = ☐

d. 5 – 2 = ☐

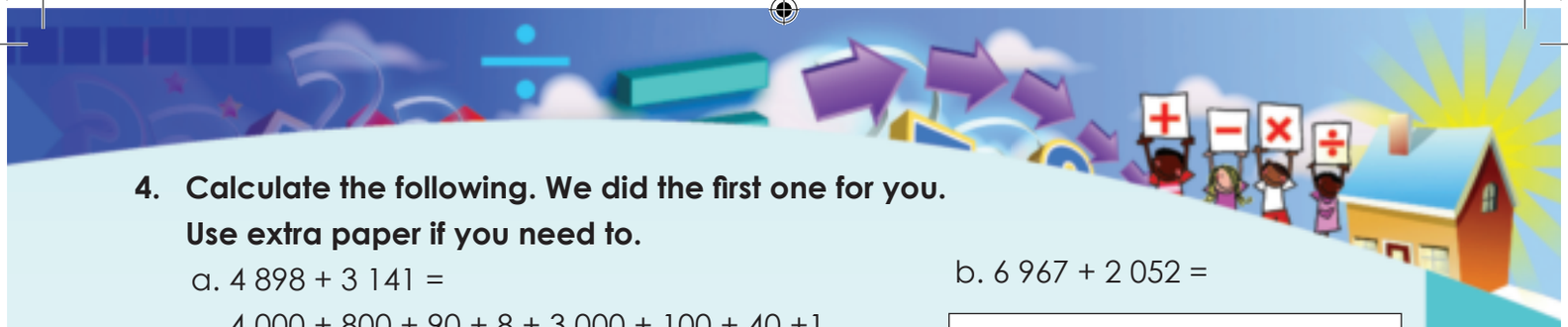
e. 50 – 20 = ☐

f. 500 – 200 = ☐

g. 7 – 3 = ☐

h. 70 – 30 = ☐

i. 700 – 300 = ☐



4. Calculate the following. We did the first one for you. Use extra paper if you need to.

a. 4 898 + 3 141 =

4 000 + 800 + 90 + 8 + 3 000 + 100 + 40 +1

= 4 000 + 3 000 + 800 + 100 + 90 + 40 + 8 + 1

= 7 000 + 900 + 130 + 9

= 7 000 + 900 + 100 + 30 + 9

= 7 000 + 1 000 + 30 + 9

= 8 000 + 30 + 9

= 8 039

b. 6 967 + 2 052 =

c. 6 442 + 1 394 =

d. 3 467 + 4 292 =

e. 8 578 + 1 262 =

f. 8 258 + 1 869 =

Sign:

Date:

continued

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

78b Addition and subtraction up to 4-digit numbers: breaking down numbers

continued

5. Calculate the following. We did the first one for you.

a. 8 445 – 4 372 =

(8 000 + 400 + 40 + 5) – (4 000 + 300 + 70 + 2)
= (8 000 – 4 000) + (400 – 300) + (40 – 70) + (5 – 2)
= 4 000 + 100 + (40 – 70) + 3
= 4 000 + (140 – 70) + 3
= 4 000 + 70 + 3
= 4 073

b. 4 624 – 1 482 =

c. 8 546 – 5 283 =

d. 5 348 – 2 195 =

e. 9 434 – 6 591 =

f. 3 358 – 1 477 =

6. Solve the problems by identifying the questions, the numbers and the operations (addition or subtraction); then make a drawing if necessary and write down a number sentence. Use an extra sheet of paper if needed.

a. My father bought a television set for R4 550. My mother bought a television stand for R3 250. How much did they pay altogether?



b. My uncle travelled 3 520 km through Africa on a safari. His friend travelled 5 659 km on his safari. How much farther did my uncle's friend travel?

c. The tank holds 4 500 litres of water. The community used 1 950 litres. How much water is left?

d. My mother used 1 550 grams of flour for all the cup-cakes she baked. My sister used 1 800 grams of flour for all the muffins she made. How much flour did they use together?

Sign:

Date:

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

79 More addition and subtraction up to 4-digit numbers: breaking down numbers

Look at each line.

4 358 + 2 000 =	**6 358**
6 358 + 300 =	**6 658**
6 658 + 20 =	**6 678**
6 678 + 1 =	**6 679**

What do you notice?

6 358 – 2 000 =	**4 358**
6 658 – 300 =	**6 358**
6 678 – 20 =	**6 658**
6 679 – 1 =	**6 678**

What do you notice?

1. Calculate the following.

a. 5 354 + 2 000 = ☐ b. 8 663 + 200 = ☐ c. 2 945 + 40 = ☐

d. 4 263 + 20 = ☐ e. 3 748 + 5 000 = ☐ f. 5 368 + 3 = ☐

2. Calculate the following.

a. 5 492 – 200 = ☐ b. 3 947 – 1 000 = ☐ c. 8 687 – 500 = ☐

d. 8 635 – 20 = ☐ e. 38 473 – 400 = ☐ f. 6 342 – 3 000 = ☐

3. Complete the table by adding or subtracting to or from the number in the first column.

	Add 1 000	Subtract 1 000	Add 100	Subtract 100	Add 10	Subtract 10	Add 1	Subtract 1
6 754								
4 856								
7 932								
6 573								
5 863								



4. Add the following by breaking down the number to be added.

Example: Adding by breaking down the number to be added

Calculate 5 362 + 2 486
5 362 + 2 000 → 7 362 + 400 → 7 762 + 80 → 7 842 + 6 → 7 848

a. 3 459 + 2 320 = ☐

b. 5 296 + 2 312 = ☐

c. 8 875 + 1 187 = ☐

d. 8 764 + 1 586 = ☐

5. Subtract the following by breaking down the number to be subtracted.

Example: Subtracting by breaking down the number to be subtracted

Calculate 4 687 – 2 143
4 687 – 2 000 → 2 687 – 100 → 2 587 – 40 → 2 547 – 3 = 2 544

a. 7 834 – 3 512 = ☐

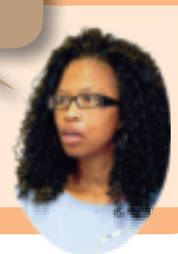
b. 8 274 – 3 843 = ☐

c. 4 322 – 1 188 = ☐

d. 7 546 – 4 657 = ☐

Check your answers

Check all your answers in question 4 and 5 by doing the inverse operation.



Sign:

Date:

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

80 Addition and subtraction up to 4-digit numbers: filling up tens by breaking down the number to be added

Revise the difference between rounding off and filling up the tens.

Round off the following to the:

Nearest ten
14 ≈ 10
28 ≈ 30

Revise this by showing it on a number line.

Nearest hundred
135 ≈ 100
564 ≈ 600

Nearest thousand
1 257 ≈ 1 000
5 616 ≈ 6 000

Fill up the following:

Tens
14 + 6 = 20, 123 + 7 = 130

Hundreds
130 + 70 = 200, 1 450 + 50 = 1 500

Thousands
1 800 + 200 = 2 000, 3 400 + 600 = 4 000

1. Round off the following to the nearest 10, 100 and 1 000. Underline the digit that will help you to round the number to the nearest 10 or 100 or 1 000. We did the first one for you.

	Nearest 10	Nearest 100	Nearest 1 000
a. 3 184	3 184 ≈ 3 180	3 184 ≈ 3 200	3 184 ≈ 3 000
b. 6 758			
c. 4 390			
d. 4 402			
e. 8 999			

2. Fill up the tens, hundreds and thousands.

	Fill up the tens	Fill up the hundreds	Fill up the thousands
a. 3 524	3 524 + 6 = 3 530	3 524 + 76 = 3 600	3 524 + 476 = 4 000
b. 5 132			
c. 1 213			
d. 8 458			
e. 4 199			



3. Calculate the following.

Filling up the tens
Calculate 2 486 + 48
2 486 + 48
= (2 486 + 14) – 14 + 48
= 2 500 + (48 –1 4)
= 2 500 + 34
= 2 534

a. 2 345 + 72 =

b. 6 872 + 34 =

c. 5 676 + 96 =

d. 6 567 + 47 =

e. 4 536 + 89 =

f. 8 671 + 51 =

Check your answers

Check all your answers in question 3 by doing the inverse operation.

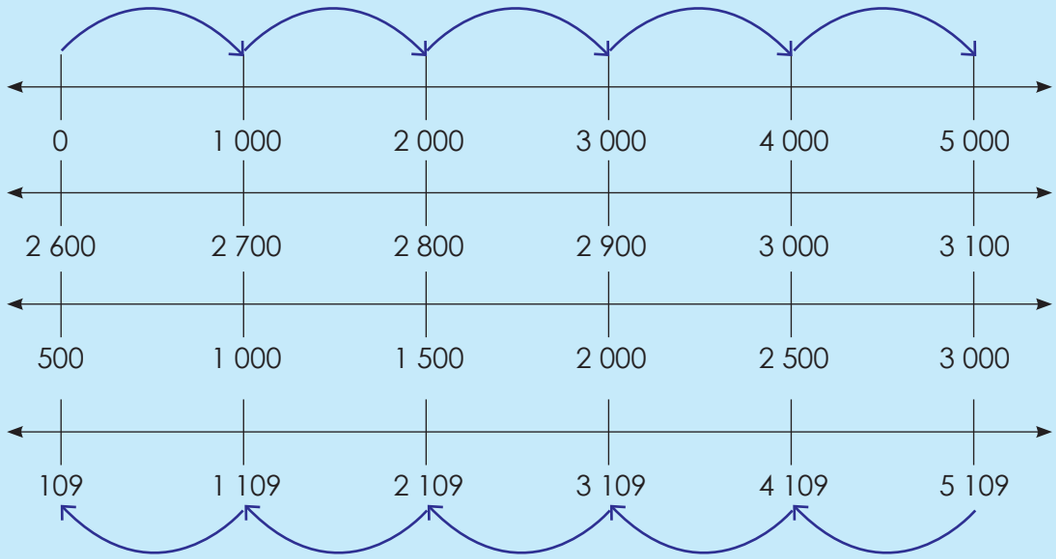
Sign:

Date:

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

81 More addition and subtraction up to 4-digit numbers

What is the difference between the numbers? Count forwards.



What is the difference between the numbers? Count backwards.

1. What number comes next?

a. 1 000, 2 000, 3 000, _____

b. 3 300, 3 400, 3 500, _____

c. 689, 1 689, 2 689, _____

d. 2 760, 3 760, 4 760, _____

2. Complete the table by adding or subtracting to or from the number in the first column.

Number	Add 100	Subtract 100	Add 1 000	Subtract 1 000
3 212				
2 910				
3 106				
1 069				
2 989				

3. Estimate the answers to these sums and write them on a separate piece of paper. Then calculate these sums writing the steps you use as shown in the two examples. Use a separate piece of paper. Then compare your estimation and calculation.



Examples:

Example 1:

1 256 + 1 323 | 1 000 | 200 | 50 | 6 | 1 000 | 300 | 20 | 3 |

= 1 000 + 1 000 + 200 + 300 + 50 + 20 + 6 + 3
= 2 000 + 500 + 70 + 9
= 2 579

Example 2:

2 459 + 1 816 | 2 000 | 400 | 50 | 9 | 1 000 | 800 | 10 | 6 |

= 2 000 + 1 000 + 400 + 800 + 50 + 10 + 9 + 6
= 3 000 +1 200 + 60 + 15
= 3 000 + 1 000 + 200 + 60 + 10 + 5
= 4 000 + 200 + 70 + 5
= 4 275

a. 2 481 + 1 318 = _____

b. 1 516 + 3 243 = _____

c. 3 265 + 1 329 = _____

d. 2 548 + 1 264 = _____

e. 1 458 + 1 258 = _____

f. 1 786 + 2 547 = _____

4. Complete the word problems. Show your calculations.

a. There were 75 children in the music lesson, 15 went home early and 3 went to soccer lessons. How many children were left in the music lesson?

_____

b. Andile collects 2 283 cans for recycling in the first month. He collects 3 325 cans in the second month. How many cans did he collect altogether?

_____

I dropped my number puzzle.

I dropped my puzzle pieces. Help me to fill the spaces so that each row and column adds up to 15. You can only use each number once.



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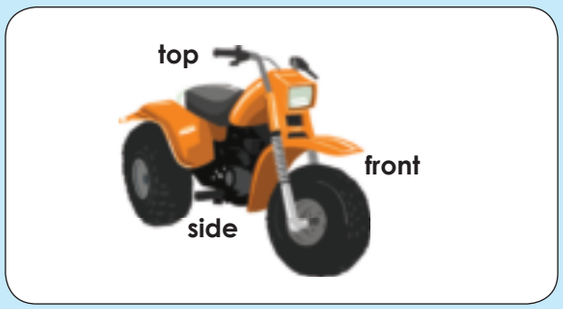
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15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

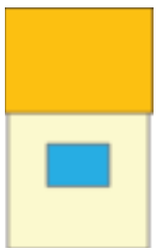
82 Views

Look at the pictures. What does front, side and top mean?

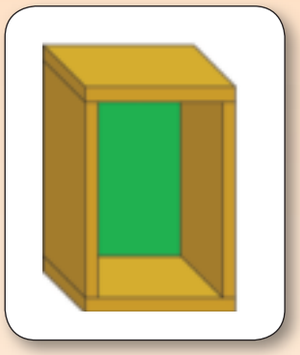


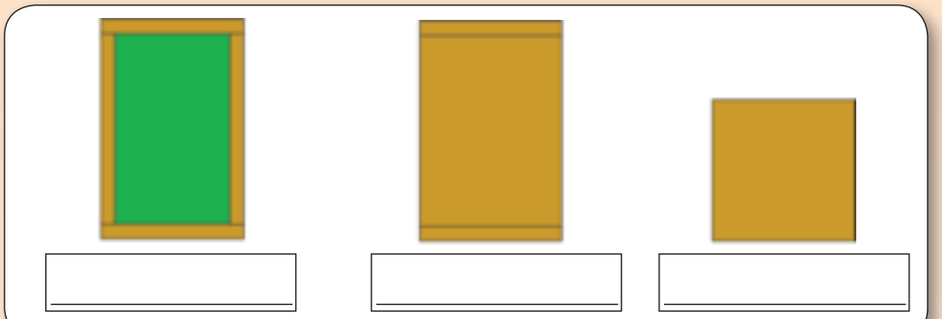


1. Complete the table by drawing the side, front and top view of each house.

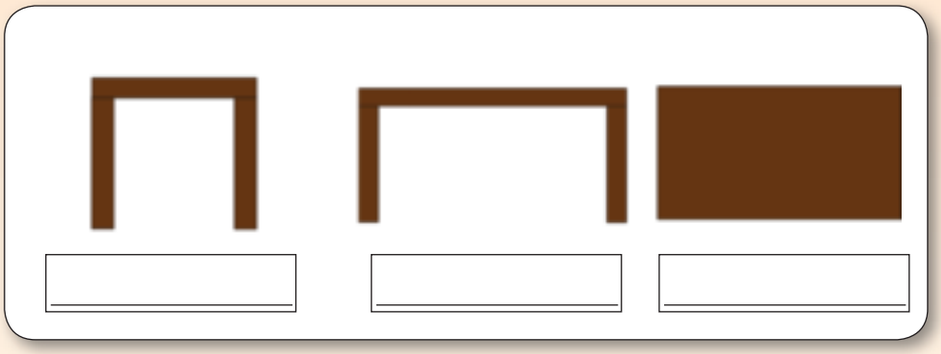
Picture	Side view	Front view	Top view
			
			
			
			

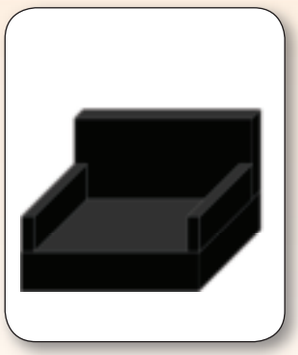
2. Name the following views:

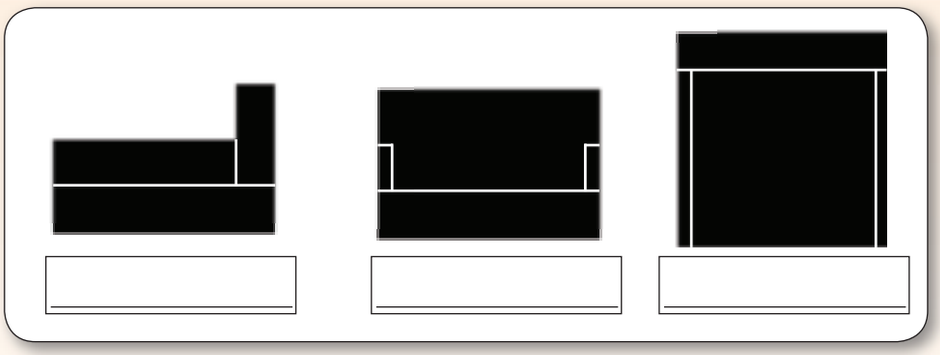












Where is the person standing?



Where do you think the person stood when he or she took the photograph?

In which direction was the photograph taken?

Sign:

Date:

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

83 More views

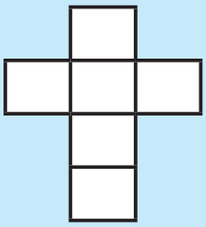
Here are the six faces of a cube:



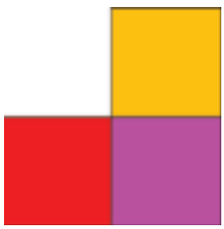
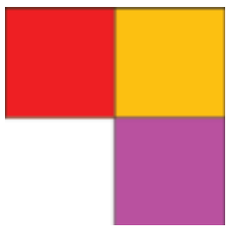
Here are three views of the cube:



Can you deduce where the faces are in relation to each other and record them on the net of the cube?

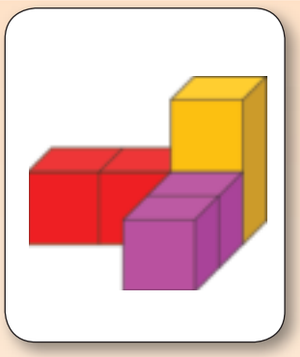


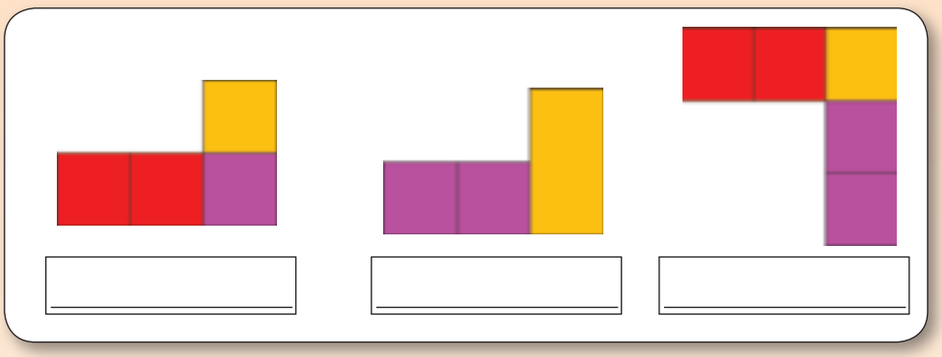
1. Complete the table.

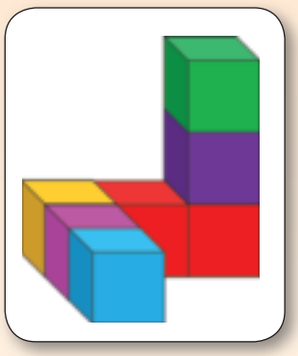
Picture	Side view	Front view	Top view
			
			
			
			

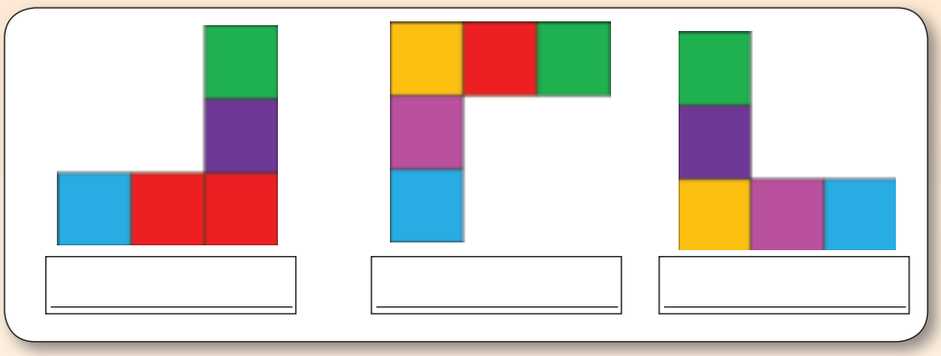
Term 3

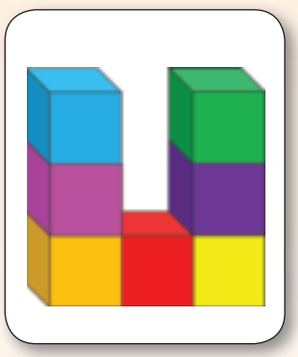
2. **Name the following views of the blocks:**

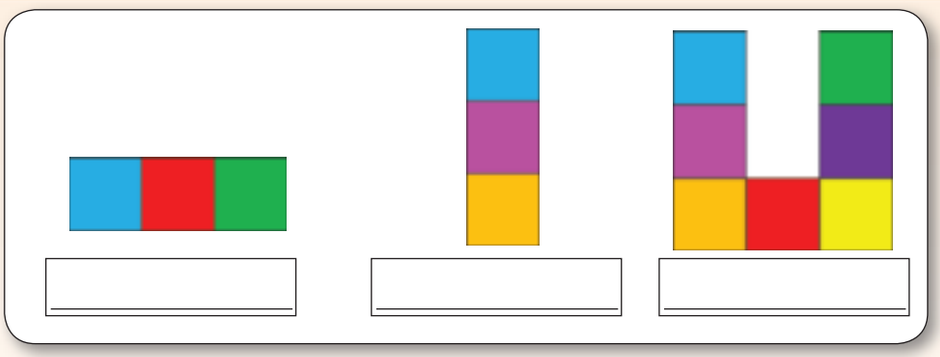












Views

What view of the child do you see?







Sign:

Date:

84 Polygons and circles

Look at the picture. Identify all the polygons. Identify a shape that is not a polygon.

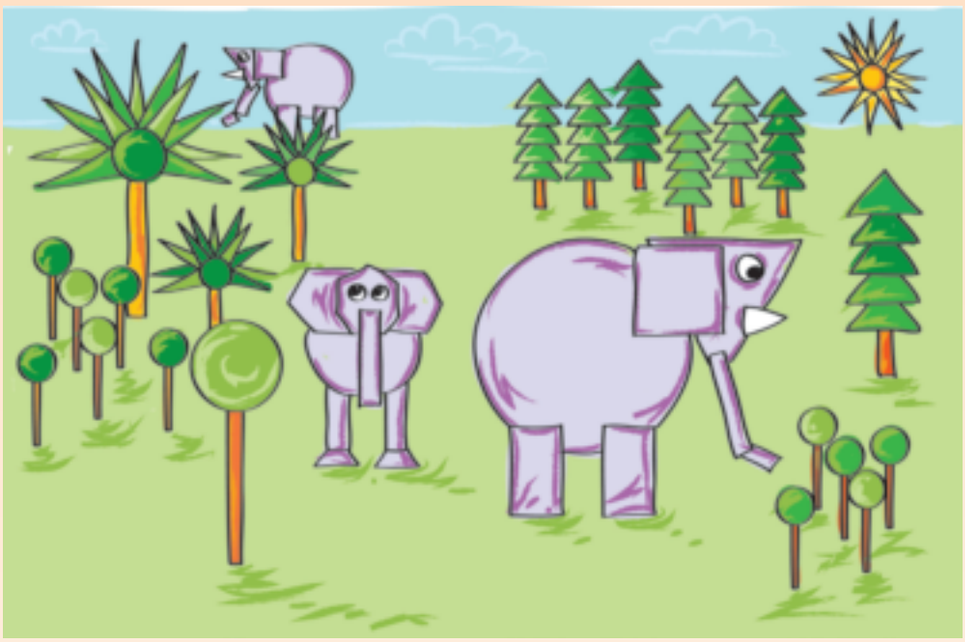


1. Look at the picture above. Draw an example of each of the shapes with straight sides. Name the shapes.

2. Under each shape write how many sides the shape has.

3. Look at the picture. Draw the shape with curved sides. Name the shape.

4. Add 5 polygons to the picture above.



5. Look at the picture. Write the alphabet letter of the shapes on the picture. For example for square shapes put the letter a. Complete the table.

Shape	Number of sides	Straight or curved sides
a. Square		
b. Hexagon		
c. Circle		
d. Triangle		
e. Rectangle		

A Shape animal

Draw your own animal using various shapes.	

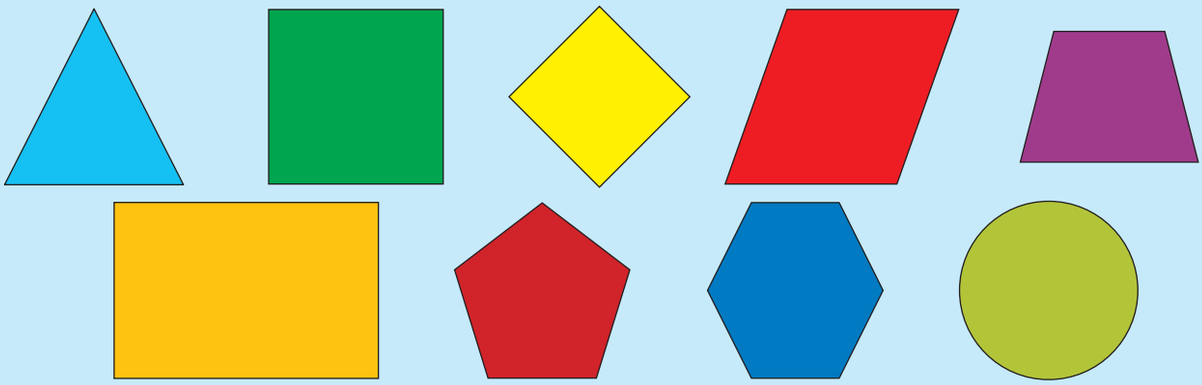
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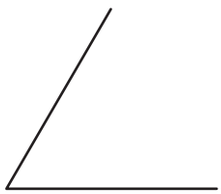
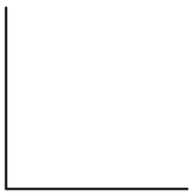
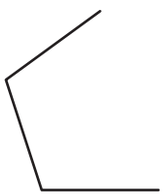
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

85a 2-D shapes

Name the 2-dimensional shapes. Say if the shapes have straight or curved sides.



1. Complete the shapes by drawing a side or sides.

Triangle 	Square 
Pentagon 	Hexagon 
Triangle _____	Square _____
Pentagon _____	Hexagon _____

2. Circle the octagons.



3. Colour the pentagons blue.



4. Draw the following in the table.

a. Two quadrilaterals	
b. Two pentagons	
c. Two heptagons	

5. Use only quadrilaterals, pentagons and hexagons to draw a 2-D representation of any building.

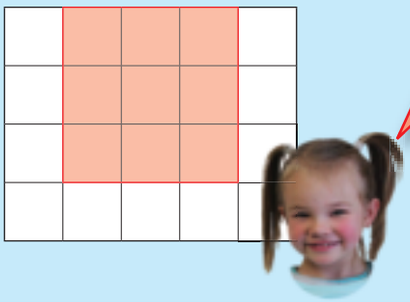
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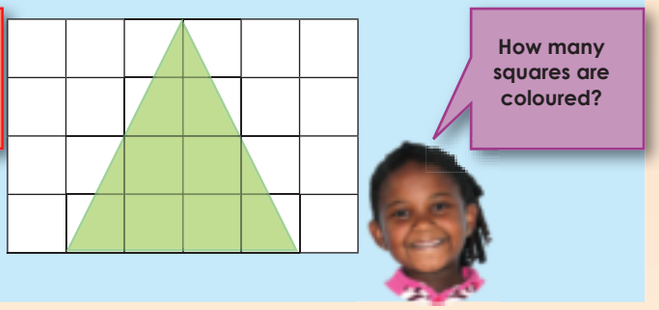
Date:

continued ☛

85b 2-D shapes continued

Using grid paper is an easy way to draw perfect, geometric shapes and diagrams.





6. Use a ruler and the lines on the grid paper to draw the following. Use extra grid paper if you need to.

a. Small and large triangle
b. Small and large square
c. Small and large rectangle
d. Small and large pentagon
e. Small and large hexagon

7. What is the area of each shape?

a. small triangle: _____

large triangle: _____

b. small square: _____

large square: _____

c. small rectangle: _____

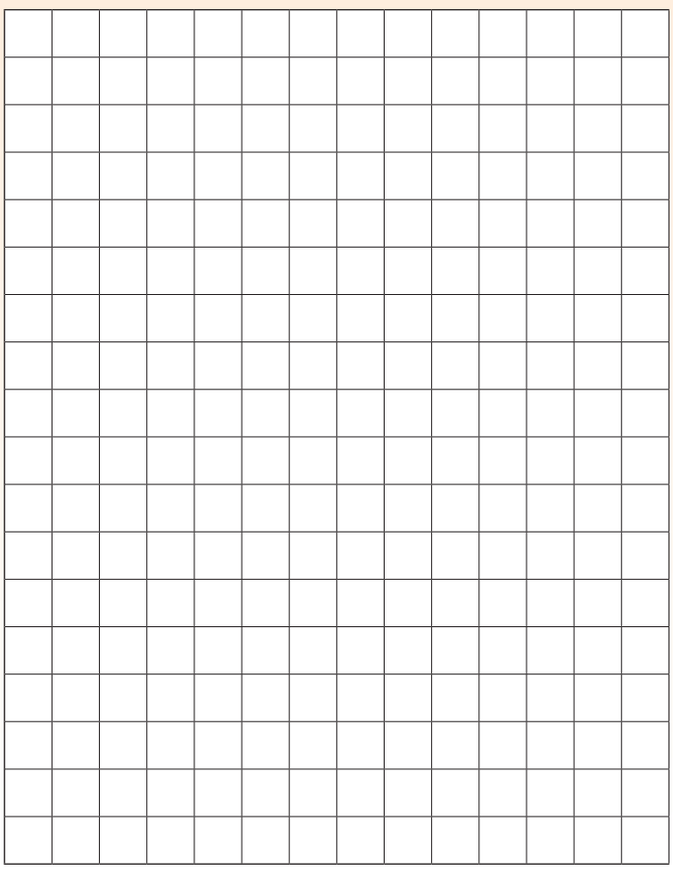
large rectangle: _____

d. small pentagon: _____

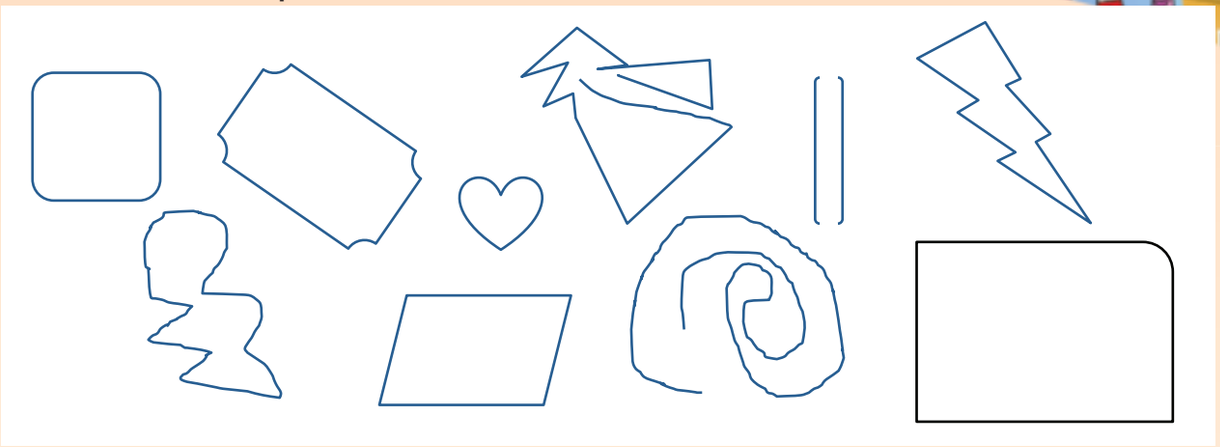
large pentagon: _____

e. small hexagon: _____

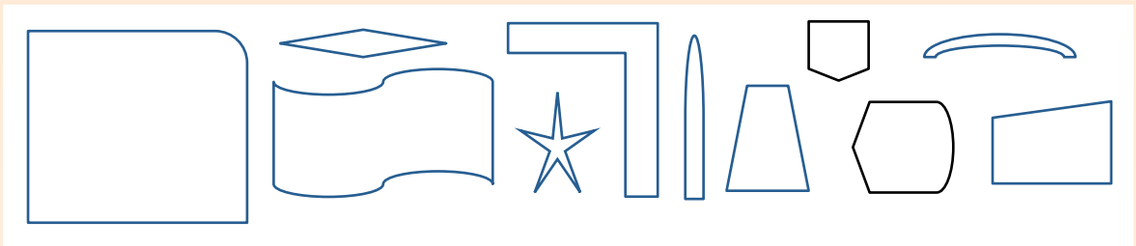
large hexagon: _____



8. Circle the closed shapes.



9. Circle the shapes with straight sides only.

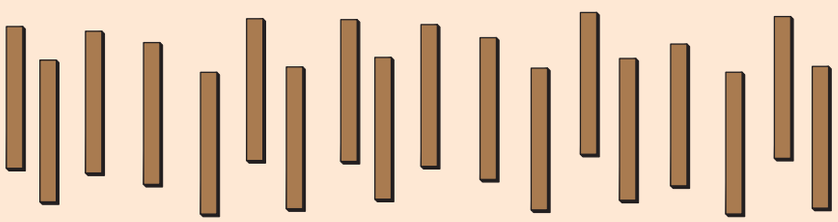


10. Draw the following shapes.

a. Two closed shapes with curved sides only	
b. Three closed shapes with straight sides only	
c. One open with curved and straight sides	

How many shapes ?

How many shapes can you make with these sticks? Name them.



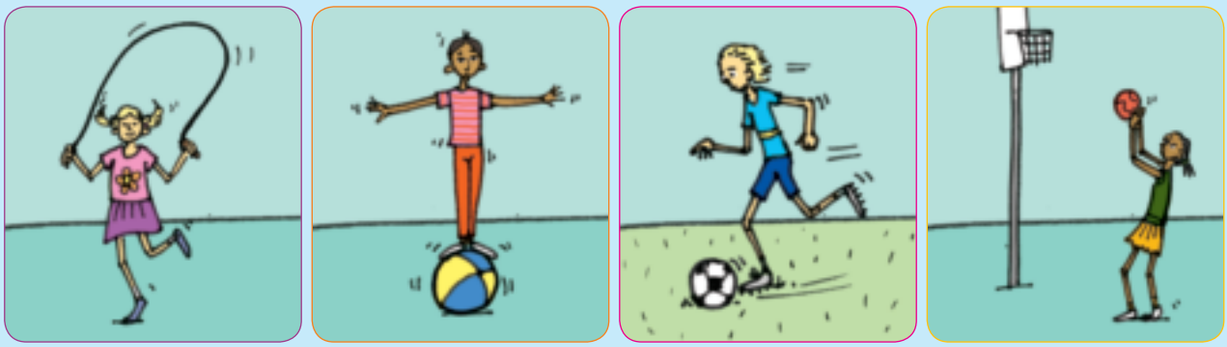
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15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

86 Data collection

Look at the pictures. Why do we need to take part in sport?



1. In groups of six you will do the following activity. Your teacher will keep time. Write your results in the table below.

   How many times can you skip in one minute?

Name	Skips in one minute

You can make a skipping rope by tying old plastic shopping bags together.



2. Write five questions on the data you have collected.

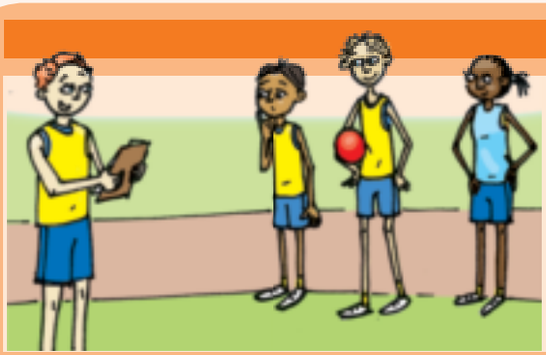
3. Each person in a group of six tries to balance on an object. Your teacher will time you to see who can stay the longest on the object. Organise and record your data.

Name	Time



4. Write five questions on the data you have collected.

Fitness survey



One of your friends told you that children in your school doing sport are more healthy.
How do you think she knows this?

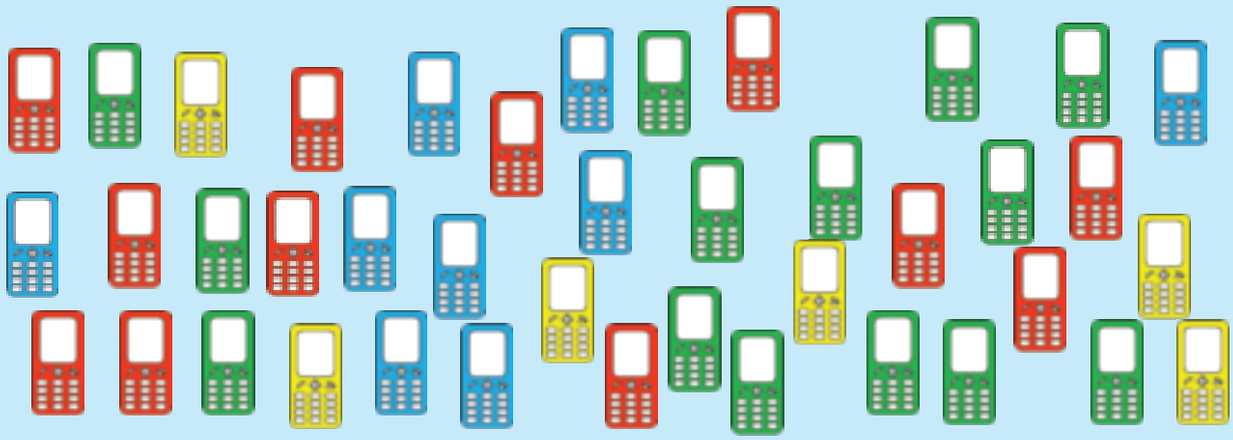
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15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

87 More on data

How many cell phones did the shop sell?



1. Complete the frequency table on coloured cell phones.

	Tally	Frequency
Red cell phone		
Blue cell phone		
Green cell phone		
Yellow cell phone		

2. Use the table above and draw a pictograph.

3. Draw a bar graph using the pictograph.



4. Complete the following questions:

a. How many yellow cell phones have been sold? _____

b. How many red cell phones have been sold? _____

c. How many blue cell phones have been sold? _____

d. How many green cell phones have been sold? _____

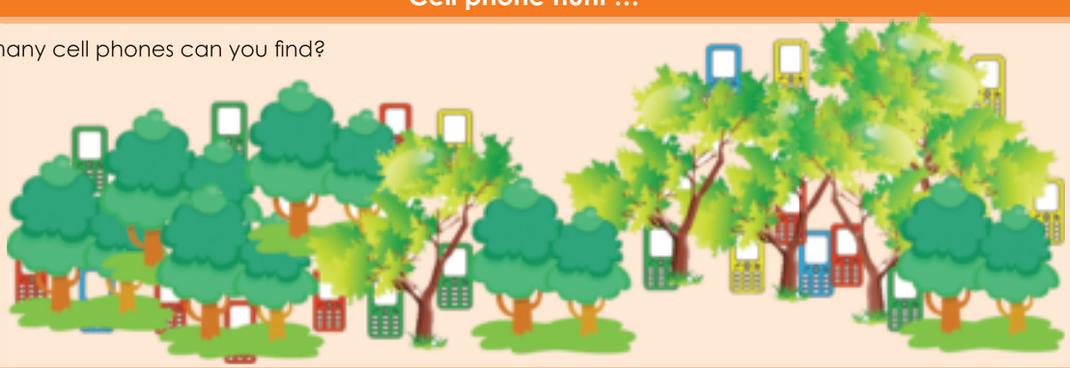
e. What colour phone was the most popular? _____

f. What colour phone was the least popular? _____

g. Why do you think green is the most popular colour? _____

Cell phone hunt ...

How many cell phones can you find?



Sign:

Date:

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

88 Pictographs

Look at the map of the food hub. Discuss it.





1. **Write down all the types of restaurants/ take-aways on the map.**

Type of Restaurant	Total

2. **Design a food picture that you will use in your pictograph.**



3. **Show the numbers of the different types of restaurants in a pictograph using the food picture you designed.**



4. **Answer the following questions.**

a. How many hamburger places are there?

b. How many take away places are there?

c. How many restaurants are there in total?

d. Which is the most common type of restuarant?

e. Which is the least common type of restuarant?

Favourite restaurant

Find out what is the favourite restaurant amongst the learners in your class.



Sign:

Date:

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

89 Pictographs and bar graphs



1. Answer the following questions:

a. What are you going to collect?

b. How will you do it?

c. How will you organise your data?

2. Draw a pictograph.

3. Draw a bar graph.

I think about data.



Decide on five questions you will ask about the bar graph. Write a short paragraph on the data collected on a separate sheet of paper.

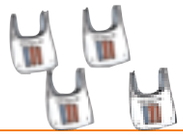
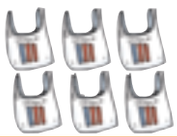
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15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

90 Data cycle

Bags of waste collected in our school.

Week	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1					
Week 2					
Week 3					
Week 4					
Week 5					

1. Draw a pictograph using the information above.

Week 1	**Week 2**	**Week 3**	**Week 4**	**Week 5**



2. **Draw a bar graph based upon your pictograph data.**

3. **Answer the following questions:**

a. How many bags of waste did we collect in

week 1? ____ week 2? ____ week 3? ____ week 4? ____ week 5? ____

b. During which week did we collect the most waste? ____

c. During which week did we collect the least waste? ____

d. What do you think happened on Friday? ____

Waste management



How many waste bags or dustbins does your class fill with rubbish each day?

____

Sign:

Date:

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

91 Pie charts

These bins filled with waste were collected after a sports day at School A. Why do you think there was so much waste?

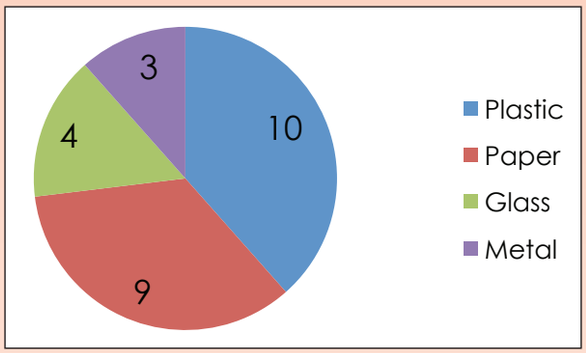


1. **Use the given information to draw up a frequency table of the different bins of waste.**

2. **Write four sentences on the waste created during the sports day.**

Example: There were eight bins full of paper waste because a lot of food was wrapped in paper or cardboard containers.

3. Another school, School B, also held a sports day. To represent the waste collected they drew a pie chart. They forgot to give it a heading. Add a heading.



a. How many waste bins of glass did they collect?

b. How many waste bins of paper did they collect?

c. How many waste bins of plastic did they collect?

d. How many waste bins of metal did they collect?

e. Compare school A's results with school B's?

f. Why do you think school B collected so much plastic?

g. What will you do with all this waste?

h. What type of waste did they not collect?

i. What will you do with this type of waste?

Mandela day:

As part of Nelson Mandela's birthday we give 67 minutes of our time to take action to help change the world for the better. This year the school wants to make big changes starting with the school grounds. What will you do? How will you collect the data?



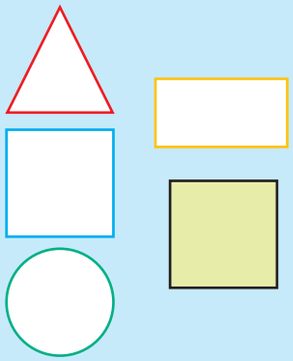
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15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

92 Number patterns

Describe all the patterns.



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

1. Complete the pattern.

a. 122, 124, 126, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

b. 366, 369, 372, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

c. 155, 160, 165, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

d. 520, 530, 540, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

e. 375, 400, 425, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

f. 250, 300, 350, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

2. Complete the pattern.

a. 846, 844, 842, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

b. 456, 453, 450, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

c. 925, 920, 915, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

d. 480 470 460

e. 725 700 675

f. 650 600 550

3. Fill in the missing numbers.

a. 100, 102, 104,

b. 156, 159, 162,

c. 285, 290, 295,

d. 100, 110, 120,

e. 175, 200, 225,

f. 150, 200, 250,

4. Fill in the missing numbers.

a. 86, 84, 82,

b. 111, 108, 105,

c. 625, 620, 615,

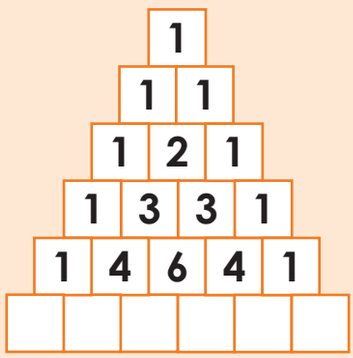
d. 260, 250, 240,

e. 475, 450, 425,

f. 950, 900, 850,

Pattern fun

What will the missing numbers be?

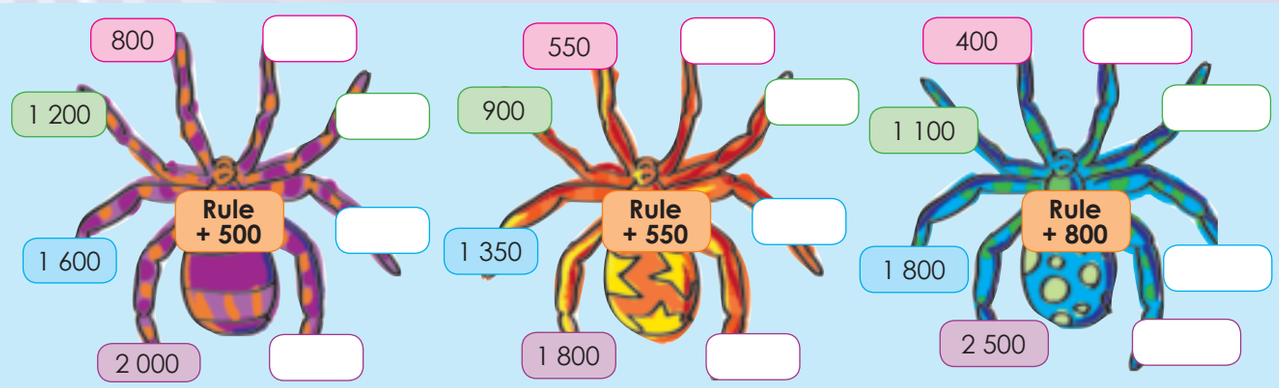


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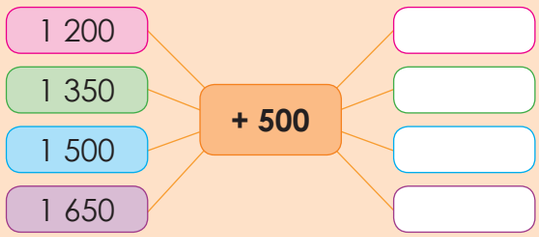
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

93 More number patterns

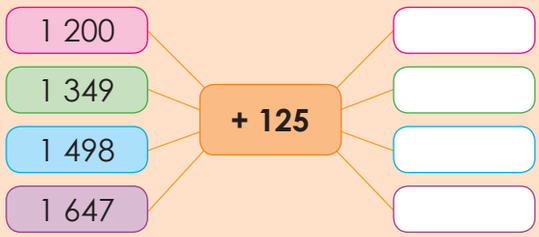


1. Complete the flow diagrams.

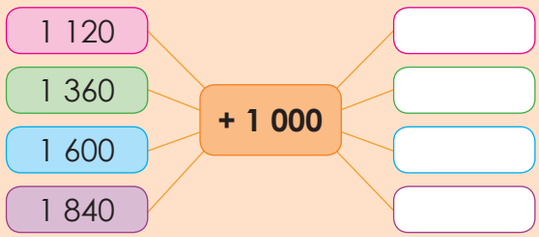
a.



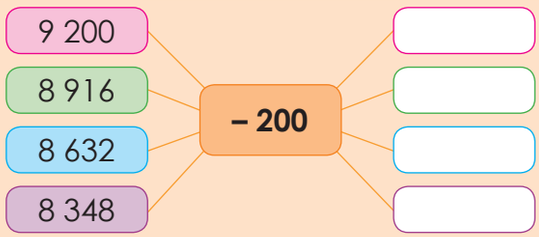
b.



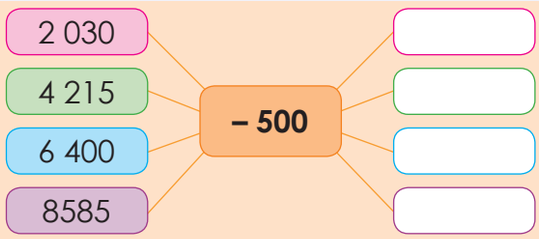
c.



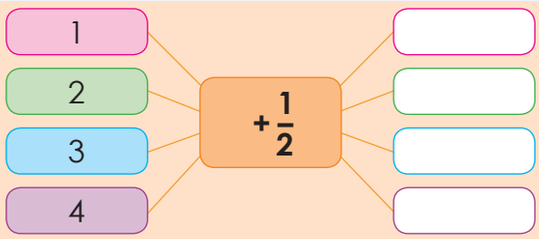
d.



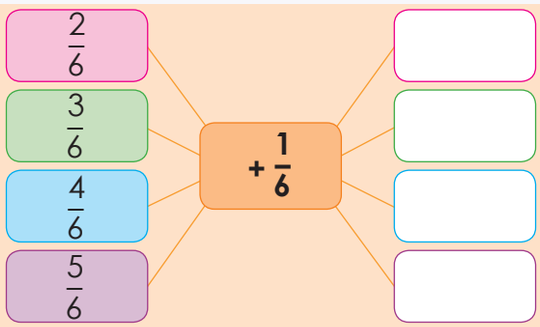
e.



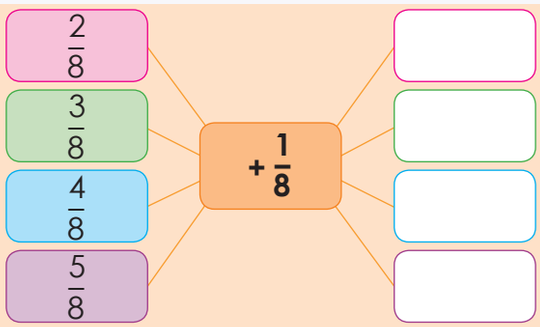
f.



g.

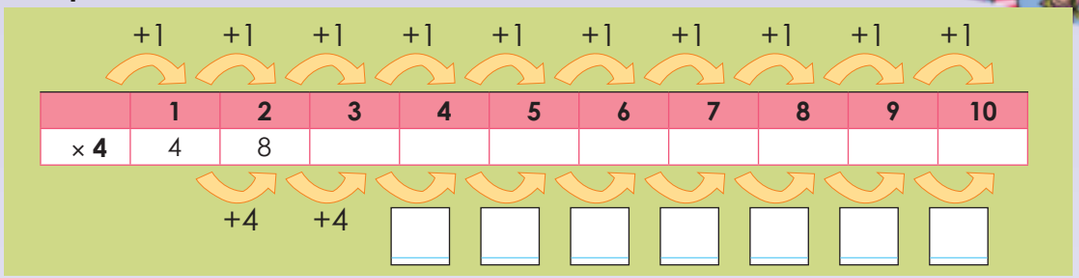


h.



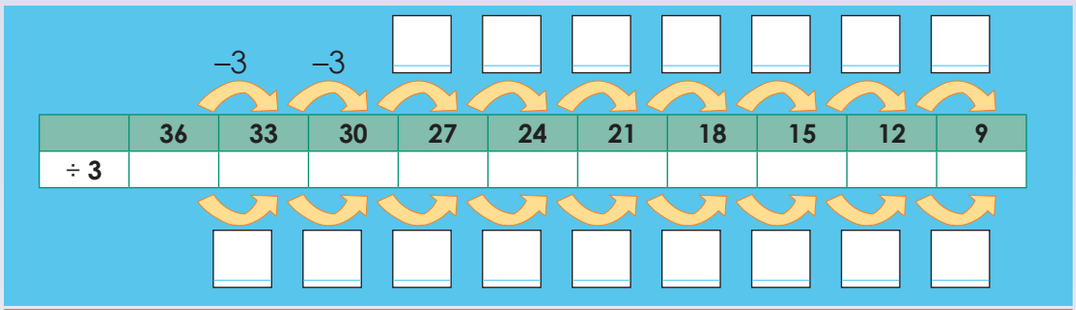
2. Complete the table.

a.



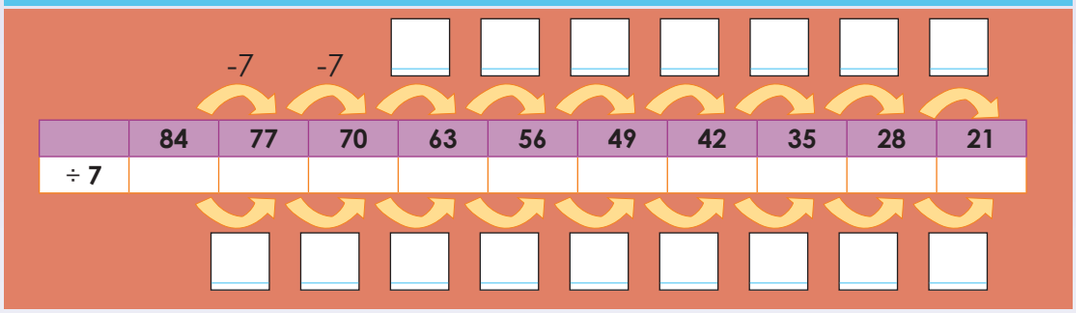
	1	2	3	4	5	6	7	8	9	10
× 4	4	8								

b.



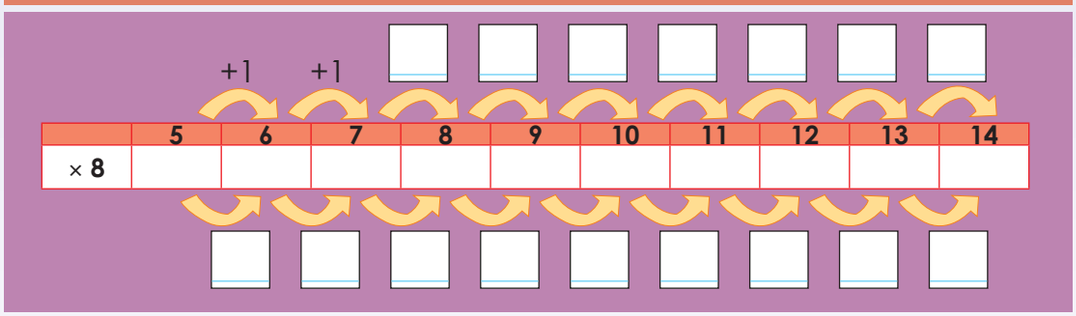
	36	33	30	27	24	21	18	15	12	9
÷ 3										

c.



	84	77	70	63	56	49	42	35	28	21
÷ 7										

d.



	5	6	7	8	9	10	11	12	13	14
× 8										

Create a table

Create your own tables like the ones above.

×										

÷										

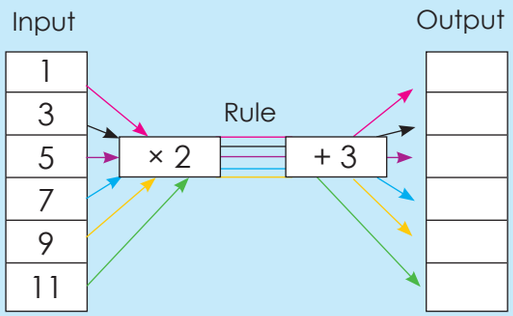
Sign:

Date:

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

94 Flow diagrams: input and output

How fast can you calculate the output value?

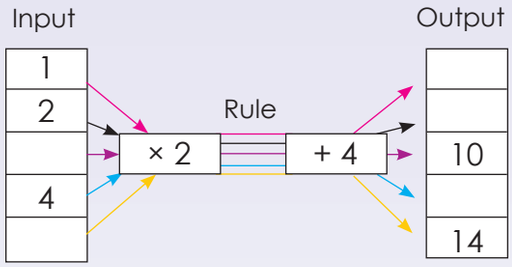


A flow diagram is balanced when the **input** (as changed by the **rule**) is **equal** to the **output**.

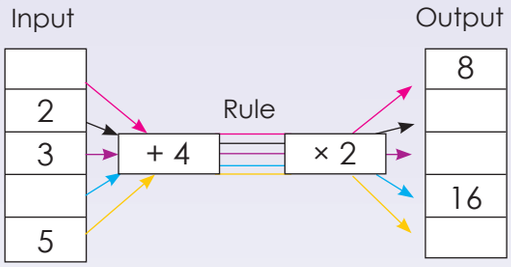
An important fact about the rule is that the order of operations may not be changed!

1. Complete the flow diagrams.

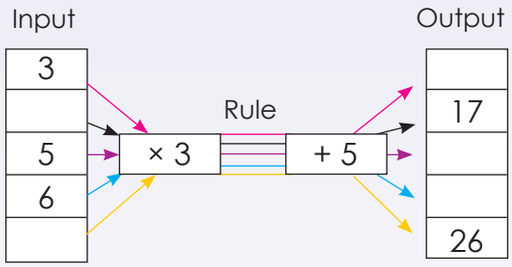
a.



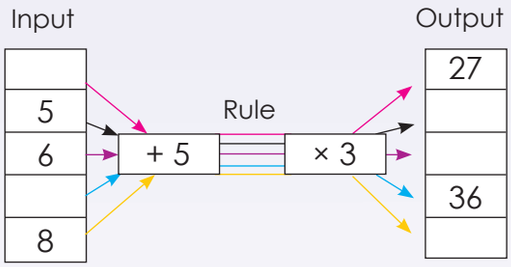
b.



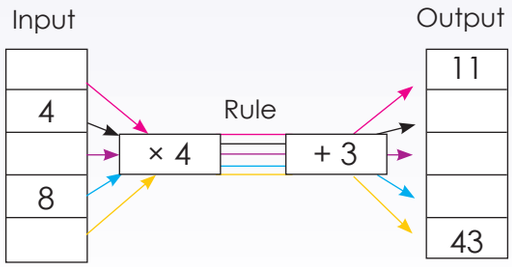
c.



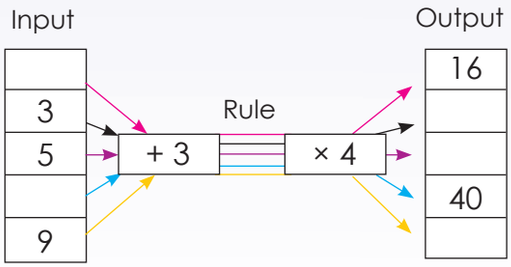
d.



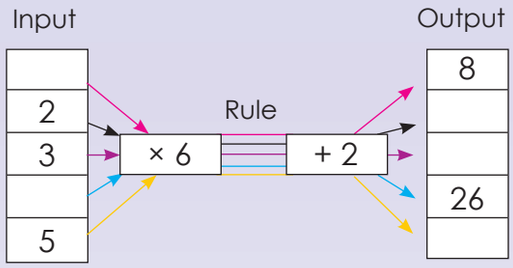
e.



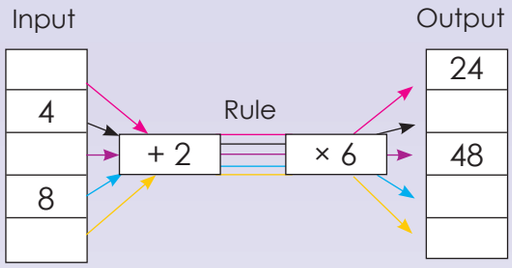
f.



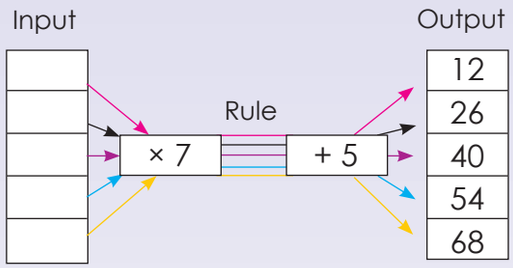
g.



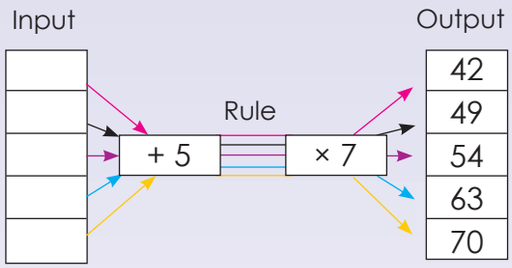
h.



i.

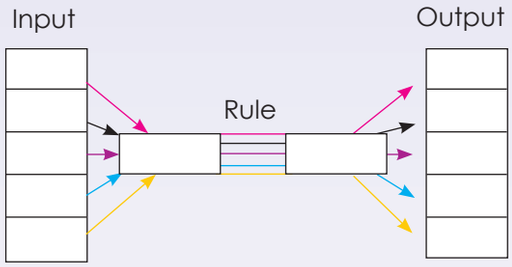


j.

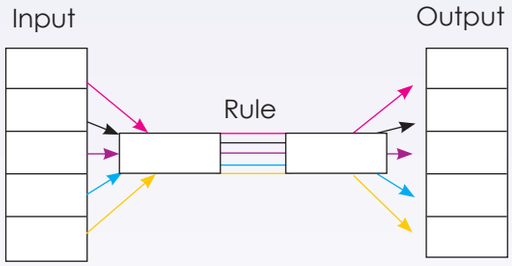


2. Complete the flow diagrams.

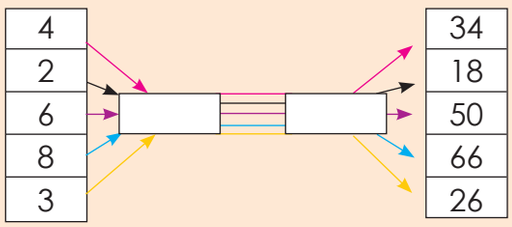
a. The input values are 2, 4, 6, 8 and 10. The rule is x 2 + 2.



b. The rule is x 3 + 1 and the output values are 10, 19, 28, 37 and 46.



Give the rule for the following flow diagram.



Sign:

Date:

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

95a Addition and subtraction: breaking down numbers

What is the difference between the two tables?

8 000 + 200 + 30 + 4 =	**8 234**
5 000 + 100 + 80 + 5 =	**5 185**
9 000 + 300 + 70 =	**9 370**
6 000 + 500 + 4 =	**6 504**
7 000 + 400 =	**7 400**

4 948 =	4 000 + 900 + 40 + 8
7 503 =	7 000 + 500 + 3
3 097 =	3 000 + 90 + 7
6 601 =	6 000 + 600 + 1
5 004 =	5 000 + 4

1. Calculate the following.

a. 3 000 + 80 = ☐

b. 7 000 + 100 + 70 + 4 = ☐

c. 4 000 + 7 = ☐

d. 5 000 + 90 = ☐

e. 8 000 + 500 + 20 + 8 = ☐

f. 9 000 + 2 = ☐

2. Write the following in expanded notation.

a. 7 483 ☐

b. 8 425 ☐

c. 3 672 ☐

3. Calculate the following.

a. 8 + 4 = ☐

b. 80 + 40 = ☐

c. 800 + 400 = ☐

d. 6 + 7 = ☐

e. 60 + 70 = ☐

f. 600 + 700 = ☐

g. 7 + 5 = ☐

h. 70 + 50 = ☐

i. 700 + 500 = ☐

4. Calculate the following.

a. 5 – 3 = ____ b. 50 – 30 = ____ c. 500 – 300 = ____

d. . 7 – 2 = ____ e. 70 – 20 = ____ f. 700 – 200 = ____

g. 9 – 6 = ____ h. 90 – 60 = ____ i. 900 – 600 = ____

5. Calculate the following using both methods.

Example:

Method 1:

Calculate: 3 791 + 4 145

3 791 + 4 145

= 3 000 + 700 + 90 + 1 + 4 000 + 100 + 40 + 5

= 3 000 + 4 000 + 700 + 100 + 90 + 40 + 1 + 5

= 7 000 + 800 + 130 + 6

= 7 936

Method 2:

1 + 5 = 6

90 + 40 = 130

700 + 100 = 800

3 000 + 4 000 = 7 000

3 791 + 4 145 = 7 936

a. 3 211 + 3 494 =

b. 6 439 + 1 290 =

Sign:

Date:

continued ☛

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

95b Addition and subtraction: breaking down numbers continued

c. 1 469 + 5 270 =

6. Calculate the following.

Example:
Calculate: 8 787 – 2 493
8 787 – 2 493
= (8 000 + 700 + 80 + 7) – (2 000 + 400 + 90 + 3)
= (8 000 + 600 + 180 + 7) – (2 000 + 400 + 90 +3)
= (8 000 – 2 000) + (600 – 400) + (180 – 90) + (7 – 3)
= 6 000 + 200 + 90 + 4
= 6 294

a. 8 874 – 3 412 =

b. 6 543 – 3 281 =

c. 9 269 – 6 189 =

d. 5 444 – 2 999 =

Problem solving

Solve the problems by identifying the questions, the numbers and the operations (addition or subtraction); then make a drawing if necessary and write down a number sentence.

- My mother bought a lounge set for R5 450. My father bought a bedroom set for R4 250. How much did they pay altogether?
- My brother travelled 5 320 km through Africa on his vacation. His friend travelled 6 595 km on his vacation. How much farther did his friend travel?
- The water tank holds 5 400 litres. Our household used 2 590 litres. How much water is left?
- I used 1 630 kg sugar in my bakery in January. In February I used 2 800 kg. How much sugar did I use in the two months?

Sign:

Date:

96 More addition and subtraction: breaking down numbers

Add the following:

5 649 + 3 000 =	
8 617 + 200 =	
8 536 + 50 =	
8 728 + 1 =	

What do you notice?

Subtract the following:

5 649 – 2 000 =	
3 617 – 300 =	
3 536 – 10 =	
3 728 – 5 =	

What do you notice?

1. Calculate the following.

a. 9 534 + 200 = ____ b. 6 543 + 20 = ____

c. 3 796 + 1 000 = ____ d. 2 014 + 2 = ____

e. 8 591 + 4 000 = ____ f. 5 699 + 500 = ____

g. 4 512 + 2 000 = ____ h. 1 853 + 400 = ____

2. Calculate the following.

a. 7 169 – 100 = ____ b. 4 976 – 50 = ____

c. 6 789 – 3 000 = ____ d. 3 135 – 1 000 = ____

e. 2 579 – 4 = ____ f. 8 646 – 500 = ____

g. 6 825 – 10 = ____ h. 8 839 – 30 = ____

3. Complete the table by adding or subtracting to or from the number in the first column.

	Add 1 000	Subtract 1 000	Add 100	Subtract 100	Add 10	Subtract 10	Add 1	Subtract 1
6 459								
4 572								
7 197								
5 475								
3 216								



4. Calculate the following by breaking down the number to be added.

Example: Adding by breaking down the number to be added

Calculate 4 658 + 3 271
4 658 + 3 000 → 7 658 + 200 → 7 858 + 70 → 7 928 + 1 → 7 929

a. 3 874 + 2 215 = ☐

b. 6 313 + 2 847 = ☐

c. 5 322 + 3 729 = ☐

d. . 7 556 + 1 876 = ☐

5. Subtract the following by breaking down the number to be subtracted.

Example: Subtracting by breaking down the number to be subtracted

Calculate 6 478 – 3 235
6 478 – 3 000 → 3 478 – 200 → 3 278 – 30 → 3 248 – 5 → 3 243

a. 3 275 – 1 434 = ☐

b. 8 745 – 4 672 = ☐

c. 5 432 – 2 874 = ☐

d. 8 159 – 3 754 = ☐

Sum problems

- What is the sum of R2 999 and R3 534?
- What is the difference between 4 738 m and 8 735 m?
- What is the sum of 4 983 g and 3 982 g?
- What is the sum of 4 983 km and 4 894 km?

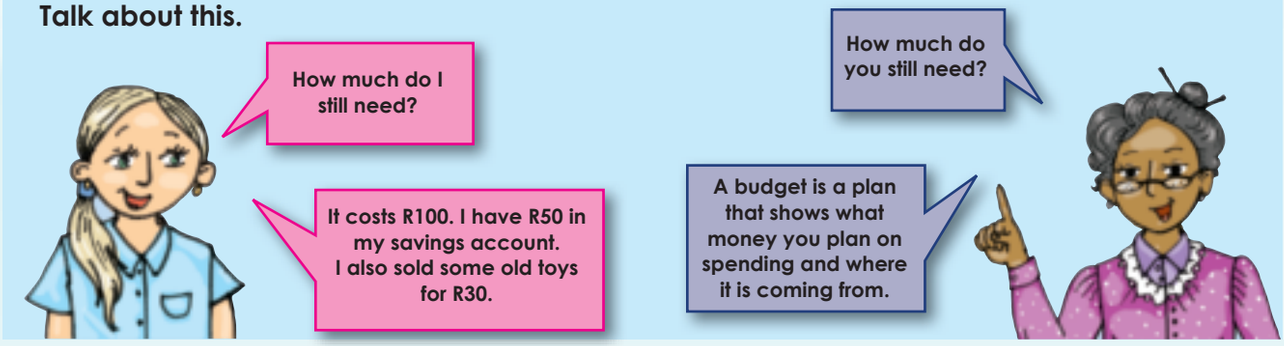
Sign:

Date:

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

97 Using a budget to solve money problems

Talk about this.



1. How much money do you have left?

a. I have R90. I spend R40.

b. I have R120. I spend R50.

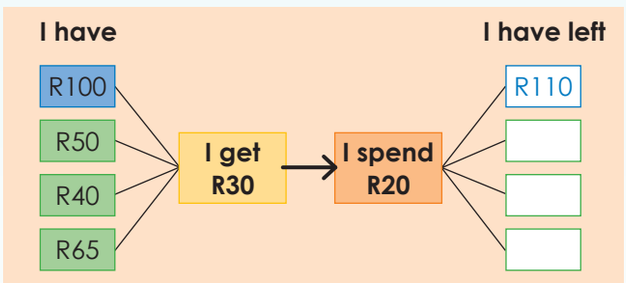
c. I have R100. I spend R50,50.

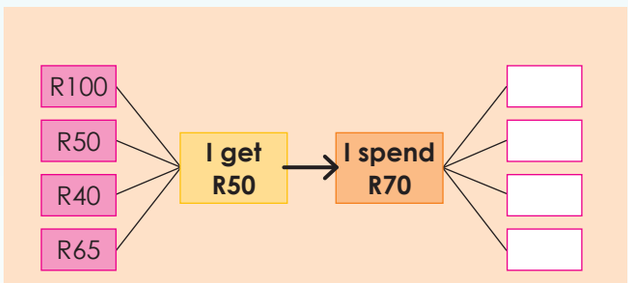
d. I have R60,75. I spend R20.

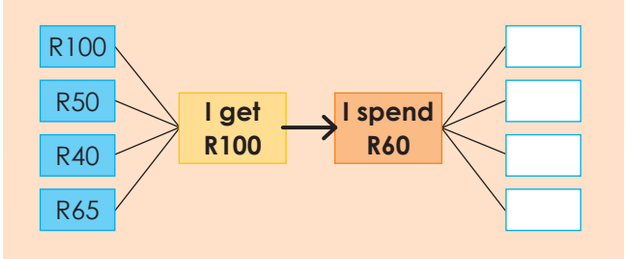
e. I have R80,50. I spend R20,20.

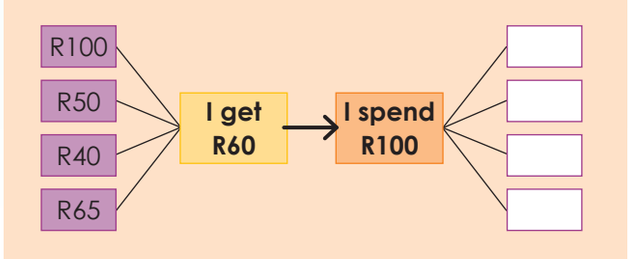


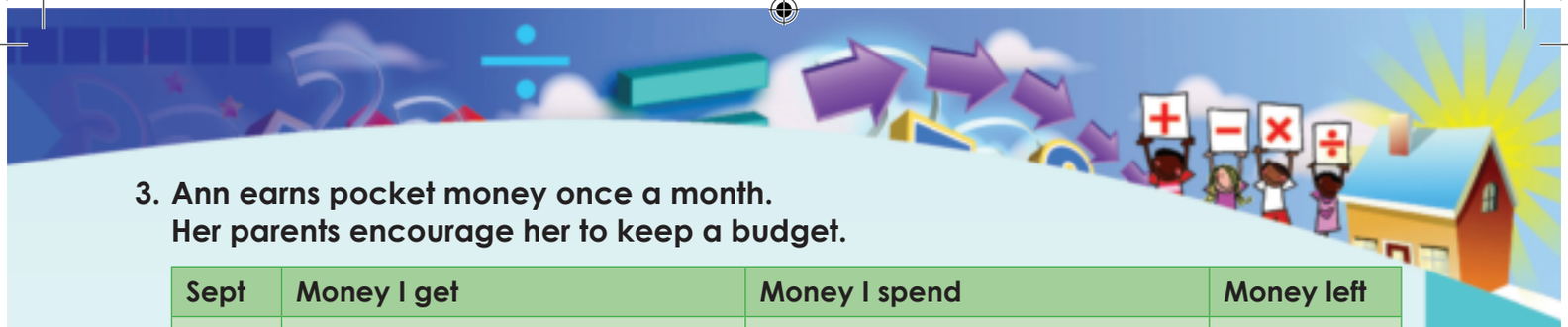
2. Complete all the calculations in each of these flow diagrams.
In the first example, I have R100, I get R30 more, I spend R20, and I then have R110 left.











3. Ann earns pocket money once a month.
Her parents encourage her to keep a budget.

Sept	Money I get		Money I spend		Money left
1	Pocket money	R50,00			R50,00
5			Tuck shop	R10,00	R40,00
6	Extra chores	R30,00			R70,00
15	Birthday present	R40,00			R110,00
18			Book	R30,00	R80,00
22	Extra chores	R30,00			R110,00
24			CD on special	R60,00	R50,00
28			Gift for friend	R30,00	R20,00

a. How much money did Ann get on the 1st of September? _____

b. How much did she spend on the 5th of September? _____

How much money is left? _____

c. Did she get or spend money on the 6th of September? _____

How much? _____ How much money does she have left? _____

d. When is Ann's birthday? _____ How much money did she get? _____

How much money does Ann have now? _____

e. What did Ann do on the 18th of September? _____

How much money does she have left? _____

f. How much did she earn on the 22nd of September? _____

What did she do to earn it? _____

How much money does she have left? _____

g. What did she buy on the 24th and 28th of September? _____

h. How much money does she have left for the month? _____

i. What can she do with the left over money? _____

Sign:

Date:

98a Multiples

What comes in ____s. Look at the pictures and discuss it.

4 

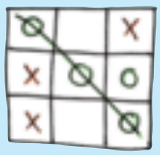
7 

8 

10 

5 

6 

9 

1. Answer the following orally:

4 How many wheels will 5 cars have? Let us count 4, 8, 12, …

5 How many fingers will 10 hands have? Let us count …

6 How many eggs will 7 half dozen boxes hold?

7 How many days will be in 8 weeks? Let us count …

8 How many legs will 9 spiders have? Let us count …

9 How many small squares will be on 5 "Noughts and crosses boards"? Let us count …



2. Colour the multiples of

4 blue

5 red

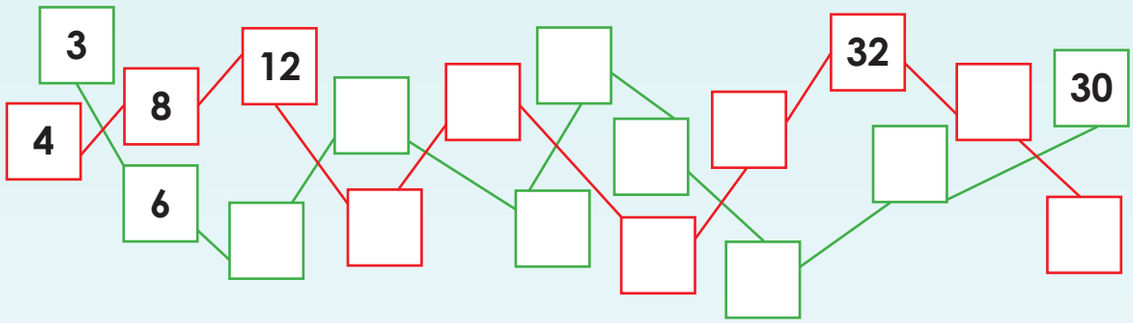
×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

3. Complete these patterns.

a. The multiples of **2** are 2, 4, 6, 8, 10, 12, ____, ____, ____, ____, ____, ____

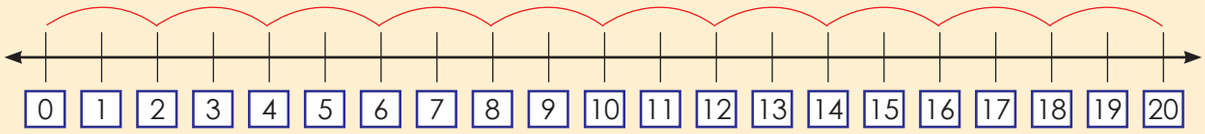
b. The multiples of **3** are 3, 6, 9, 12, 15, 18, ____, ____, ____, ____, ____, ____

4. Complete the patterns.

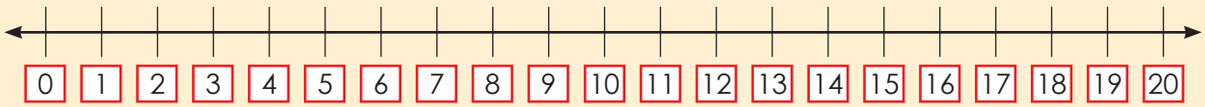


5. Show the following on the number lines.

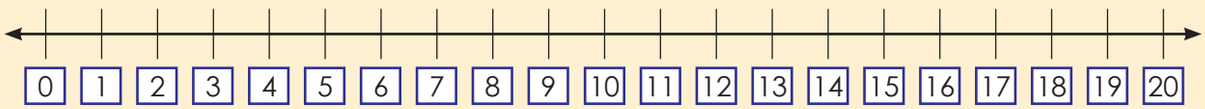
a. Multiples of 2



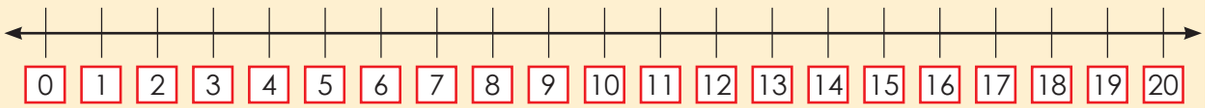
b. Multiples of 5



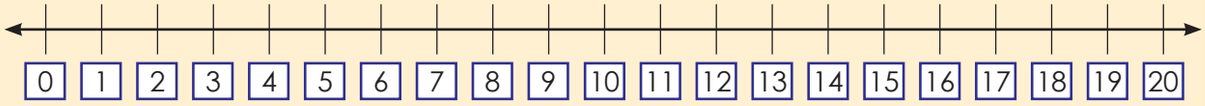
c. Multiples of 3



d. Multiples of 4



e. Multiples of 6



Sign:

Date:

continued ☛

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Multiples continued

6. Give the missing multiples:

a.

×	1	2	3	4	5	6	7	8	9	10
3	3	6	9	12	15					
	3 × 1	3 × 2	3 × 3	3 × 4	3 × 5	3 × 6	3 × 7	3 × 8	3 × 9	3 × 10

b.

×	1	2	3	4	5	6	7	8	9	10
2										

c.

×	1	2	3	4	5	6	7	8	9	10
6										

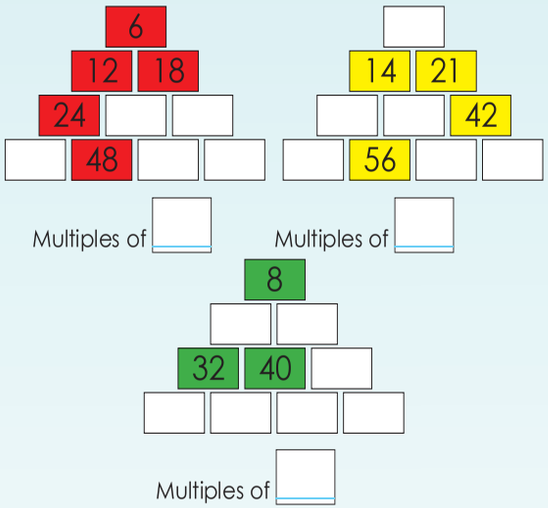
d.

×	1	2	3	4	5	6	7	8	9	10
4										

e.

×	1	2	3	4	5	6	7	8	9	10
5										

7. Complete the multiple pattern.



8. These numbers are multiples of:

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

b. 6, 12, 18, 24, 30, . . .

c. 10, 20, 30, 40, 50, 60, . . .

d. 5, 10, 15, 20, 25, . . .

e. 7, 14, 21, 28, 35, . . .

A riddle

I am thinking of 3 numbers.
They are all multiples of 2, 5 and 10.
They all have 2 digits.
They are all greater than 10 and less than 41.
They are all even.

What are the numbers?



98c More multiples

Multiples of a number can be made by multiplying the number by any whole number. The first four multiples of 2 are **2**, **4**, **6** and **8**. You get them by doing 2 × **1**, 2 × **2**, 2 × **3** and 2 × **4**.



Reminder: When you do multiplication you can write the numbers in any order and get the same answer. 8 × 3 is the same as 3 × 8.

1. Complete the following:

a. The numbers you find in the 3-times table are all multiples of ____.

b. The numbers you find in the 4-times table are all multiples of ____.

c. Here is how to make multiples of 4. Just multiply ____ by a whole number each time.

1 × 4 = ____, 2 × 4 = ____, 3 × 4 = ____, 4 × 4 = ____, ____,
____, ____, ____, ____

d. The numbers you find in the 5-times table are all multiples of ____.

e. Here is how to make multiples of 5. Just multiply ____ by a whole number each time.

1 × 5 = ____, 2 × 5 = ____, 3 × 5 = ____, 4 × 5 = ____, ____,
____, ____, ____, ____

f. Here is how to make multiples of 6. Just multiply ____ by a whole number each time.

1 × 6 = ____, 2 × 6 = ____, 3 × 6 = ____, 4 × 6 = ____, ____,
____, ____, ____, ____

2. Complete the following:

a. Is 12 a multiple of 4? If you multiply 4 by ____, you get ____,
so 12 is a multiple of ____.

b. Is 36 a multiple of 6? If you multiply 6 by ____, you get ____,
so 36 is a multiple of ____.

c. Is 49 a multiple of 7? If you multiply 7 by ____, you get ____,
so 49 is a multiple of ____.

3. Complete the following:

a. 20 is a multiple of 5, because ____ × ____ = 20.
20 is a multiple of 4, because ____ × ____ = 20.

b. 42 is a multiple of 6, because ____ × ____ = 42.
42 is a multiple of 7, because ____ × ____ = 42.

c. 56 is a multiple of 7, because ____ × ____ = 56.
56 is a multiple of 8, because ____ × ____ = 56.

In real life?

What comes in multiples of these numbers in the everyday world?

2 5 10

Remember you can not give the same answers as before.



Sign:

Date:

99a Multiplication: 2-digit by 2-digit and 3-digit by 1-digit and 2-digit

What number comes next?



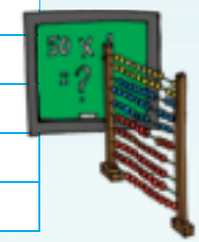


Try this!



1. Complete the table below.

Number	x 1	x 2	x 3	x 4	x 5	x 6	x 7	x 8	x 9
50									
80									
100									
150									
200									



2. Use both methods to solve the sums below. Write the steps you use on a separate piece of paper.

Example 1:

57 x 78 = (50 x 70) + (7 x 70) + (50 x 8) + (7 x 8)
= 3 500 + 490 + 400 + 56
= 3 000 + 500 + 400 + 90 + 400 + 50 + 6
= 3 000 + 500 + 400 + 400 + 90 + 50 + 6
= 3 000 + 1 300 + 140 + 6
= 3 000 + 1 000 + 300 + 100 + 40 + 6
= 4 000 + 400 + 40 + 6
= 4 446

Example 2:

216 x 6 = (200 x 6) + (10 x 6) + (6 x 6)
= 1 200 + 60 + 36
= 1 000 + 200 + 60 + 30 + 6
= 1 000 + 200 + 90 + 6
= 1 296



a. 67 x 39 = ____ b. 76 x 56 = ____
c. 66 x 43 = ____ d. 28 x 92 = ____
e. 83 x 47 = ____

a. 597 x 7 = ____ b. 715 x 6 = ____
c. 916 x 4 = ____ d. 405 x 9 = ____
e. 498 x 8 = ____

3. Solve the problems.

a. There are 45 sweets in one packet. How many sweets are there in 12 packets?

b. The shopkeeper sells 98 litres of milk in one week. How many litres will he have sold in 12 weeks?

4. Calculate this.

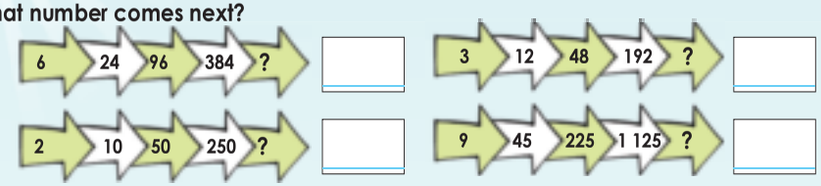
2 x 3 x 1 x 2 x 3 x 1 x 2 = ____

2 x 4 x 3 x 2 x 4 x 3 x 2 = ____

continued

Multiplication: 2-digit by 2-digit and 3-digit by 1-digit and 2-digit continued

5. What number comes next?



6. Complete the table.

Number	x 10	x 20	x 30	x 40	x 50
40					
45					
50					
55					
60					

7. Calculate the following:

a. 27 × 15 =

b. 56 × 76 =

c. 456 × 2 =

d. 576 × 9 =

8. Solve the problems.

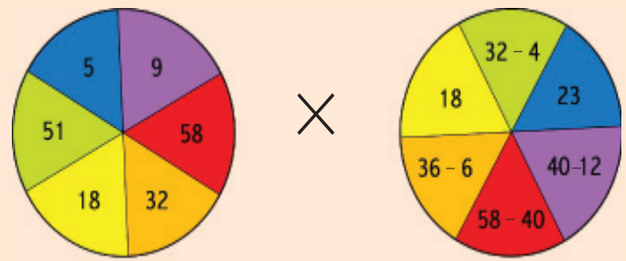
a. There are 25 marbles in one bag. There are 19 bags. How many marbles are there in total.

b. The computer game costs R199. My father bought two. How much did he pay?

c. Each chicken costs R42. We need to buy 35 chickens for the function. How much will we pay for all the chickens?

Spinning numbers

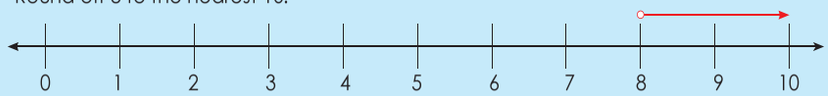
Multiply the numbers with the same colour.



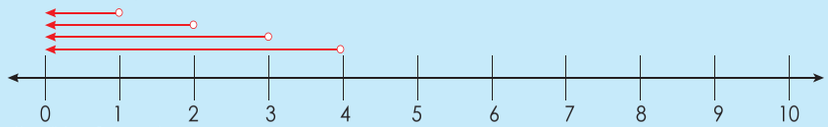
100 Using approximation in multiplication

Revise the following

Round off 8 to the nearest 10.

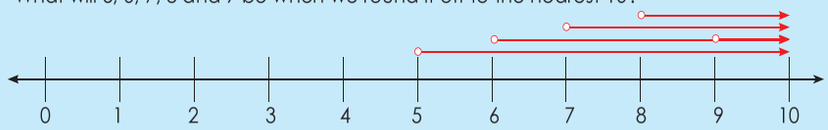


What will 1, 2, 3 and 4 be when we round it off to the nearest 10?



It will be 0 (zero).

What will 5, 6, 7, 8 and 9 be when we round it off to the nearest 10?



It will be 10.

1. Round off the following to the nearest ten.

a. 78 = b. 14 = c. 69 =

d. 22 = e. 55 = f. 98 =

g. 81 = h. 36 = i. 43 =

2. Calculate the following by approximation using the example to guide you.

Example:

46 x 58 ≈ 50 x 58 (by approximating the first number in the sum)
≈ 50 x (50 + 8)
≈ (50 x 50) + (50 x 8)
≈ 2 500 + 400
≈ 2 900

a. 23 x 39 = b. 48 x 63 = c. 26 x 46 =

d. 49 x 74 = e. 32 x 58 = f. 36 x 52 =

3. Calculate the following by approximation using the example to guide you.

Example:

46 x 58 ≈ 46 x 60 (by approximating the second number)
≈ (40 + 6) x 60
≈ (40 x 60) + (6 x 60)
≈ 2 400 + 360
≈ 2 760

a. 38 x 65 = b. 54 x 41 = c. 58 x 37 =

Approximately how much will it cost?

What is the approximate cost if my company wants to buy 54 pairs of shoes at R69 per pair?

101 Multiplication by breaking down the second number

Look at the examples below. What do you notice?

Example:	**Example:**
6 = 2 x 3	30 = 2 x 3 x 5
108 = 2 x 2 x 3 x 3 x 3	60 = 2 x 2 x 3 x 5
324 = 2 x 2 x 3 x 3 x 3 x 3	90 = 2 x 3 x 3 x 5
54 = 3 x 3 x 3 x 2	150 = 2 x 3 x 5 x 5
216 = 2 x 2 x 2 x 3 x 3 x 3	180 = 2 x 2 x 3 x 3 x 5

1. Break down the numbers into 2s and 3s.

a. 18 = ____ b. 90 = ____ c. 60 = ____

d. 66 = ____ e. 42 = ____ f. 78 = ____

g. 54 = ____ h. 84 = ____ i. 30 = ____

2. Break down the numbers into 2s/ 3s/ 5s or a combination.

a. 210 = ____ b. 90 = ____ c. 180 = ____

d. 120 = ____ e. 270 = ____ f. 30 = ____

g. 60 = ____ h. 150 = ____ i. 240 = ____

3. Break down the second number into 2s and 3s.

Example 1:

58 x 12 = 58 × 2 × 6 (I broke down the second number into 2 and 6)
= 58 × 2 × 2 × 3
= 116 × 2 × 3
= 232 × 3
= (200 + 30 + 2) × 3 (I can break the number down even further into 2, 2 and 3)
= 600 + 90 + 6
= 696



a. 33 × 42 =

b. 46 x 78 =

c. 34 x 90 =

4. Multiply by breaking down the second number into 2s, 3s and 5s.

Example:

58 x 54 = 58 x 9 x 6 (I broke down the second number into 9 and 6)
= 58 x 3 x 3 x 6
= 174 x 3 x 6
= 522 x 6
= (500 + 20 + 2) x 6 (I can break it down even further into 3, 3 and 6)
= 3 000 + 120 + 12
= 3 132



a. 210 x 32 =

b. 90 x 45 =

c. 39 x 30 =

Counting the cost ...

My teacher had to buy apples for all 3 classes in the grade. She bought 60 apples per class and paid R3 per apple. How much did she pay for the apples?

Properties of number

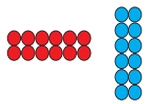
Quick recall. How fast can you answer the following.

3 + 4 =	7 x 2 =	3 x 3 =	4 + 2 =
7 x 1 =	4 x 3 =	3 x 2 =	5 + 3 =
9 x 2 =	1 + 2 =	3 + 3 =	5 x 2 =
6 x 2 =	4 x 3 =	1 x 3 =	2 x 2 =
9 + 2 =	8 x 3 =	3 + 2 =	4 + 3 =

1. Complete the following. The example will guide you.

a.	7 + 1 = 1 + 7	70 + 10 = 10 + 70
b.	☐ + 3 = 3 + 2	20 + ☐ = 30 + 20
c.	8 + 4 = 4 + ☐	80 + 40 = ☐ + 80
d.	1 + 6 = ☐ + 1	10 + ☐ = 60 + 10
e.	4 + 2 = 2 + ☐	☐ + ☐ = ☐ + 40

2. Look at the first example. Make your own drawings to show this.

a.  2 x 6 = 6 x 2	b. 1 x 7 = 7 x 1
c. 9 x 3 = 3 x 9	d. 8 x 5 = 5 x 8
e. 4 x 8 = 8 x 4	f. 3 x 3 = 3 x 3

3. Complete the following:

a. 7 + (1 + 4) = (1 + 7) + 4

7 + ☐ = 8 + 4

12 = ☐

b. b. (8 + 1) + 4 = (1 + ☐) + 8

9 + 4 = ☐ + 8

☐ = 13

c. 2 + (6 + 4) = (☐ + 6) + 4

2 + 10 = ☐ + 4

☐ = ☐

d. 1 + (3 + ☐) = (1 + 4) + 3

1 + ☐ = ☐ + 3

8 = 8

e. ☐ + (4 + 3) = (3 + 1) + 4

1 + 7 ☐ = ☐ + 4

☐ = ☐

4. Complete the following:

a. 2 x (2 x 3) = (2 x 2) x 3

2 x 6 = 4 x ☐

12 = 12

b. 2 x (3 x 1) = (3 x 2) x 1

2 x 3 = ☐ x 1

☐ = ☐

c. 3 x (5 x 2) = (2 x 3) x ☐

☐ x 10 = 6 x 5

30 = 30

d. 4 x (3 x 3) = (3 x 4) x ☐

4 x ☐ = 12 x 3

36 = 36

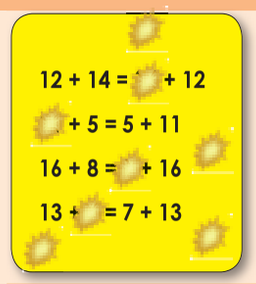
e. 6 x (3 x 2) = (2 x 6) x 3

☐ x 6 = ☐ x 3

☐ = 36

I made a mess ...

Help me to find the numbers I messed on.



Sign:

Date:

103 Basic operations

Quick recall.

5 000 + 6 =	6 000 − 400 =	4 000 − 80 =
250 × 4 =	400 × 8 =	800 ÷ 5 =
4 500 − 700 =	8 000 + 25 =	30 × 30 =
880 ÷ 8 =	5 000 ÷ 5 =	7 800 ÷ 6 =
9 000 + 900 =	50 × 60 =	7 500 + 150 =

1. Work these out in you head.

a. 36 plus 7 ____

b. 4 multiplied by 6 ____

c. The sum of 15 and 32 ____

d. Divide 48 by 8 ____

e. The product of 10 and 11 ____

f. What is the remainder of 22 is divided by 5? ____

g. What is 12 less than 4 time a hundred? ____



2. Tick the correct answer.

a. Another word for addition is:
- i. subtraction
- ii. product
- iii. plus/the sum of

b. Minus means the same as:
- i. subtraction
- ii. product
- iii. divide

c. Ten thousand has ___ zeros.
- i. 2
- ii. 3
- iii. 4

d. Ten thousand is a ___ digit number.
- i. 3
- ii. 4
- iii. 5

e. The product of 6 and 100 is:
- i. 106
- ii. 600
- iii. 94

f. When adding or subtracting, if a number ends in 9 round it up to the next 10, and then take away or add ___.
- i. 10
- ii. 9
- iii. 1

g. 37 r 3. The r stands for:
- i. remainder
- ii. number
- iii. revision

h. Share 3 000 between 2:
- i. 300
- ii. 1 500
- iii. 1 000

3. Work these out in you head.

a. 72 ÷ 9 = ____

b. 84 ÷ 4 = ____

c. 65 ÷ 5 = ____

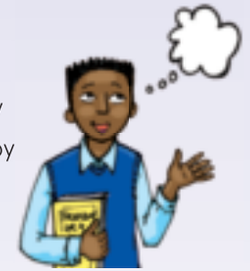
d. 93 ÷ 3 = ____

e. 28 ÷ 5 = ____

f. 31 ÷ 6 = ____

4. Match column A with column B.

A	B
a. Addition	i. Share
b. Subtraction	ii. Product
c. Multiplication	iii. Increase by
d. Division	iv. Decrease by



5. Fill in the correct symbol.

+ − × ÷

a. 80 ___ 2 = 160

b. 10 000 ___ 400 = 10 400

c. 399 ___ 301 = 98

d. 99 ___ 9 = 11

e. 25 ___ 4 = 100

f. 2 345 ___ 214 = 2 559

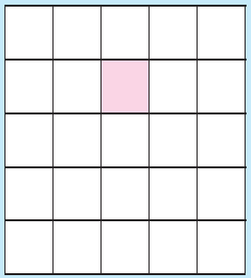
Operation symbols and numbers

Fill in the correct symbol and number. + − × ÷

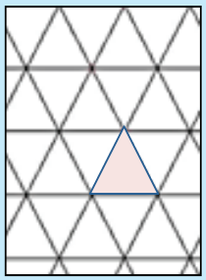
100	÷ 5	20		50		100		120
60		10		40		50		20
25		5		25		50		10

104a Composite shapes

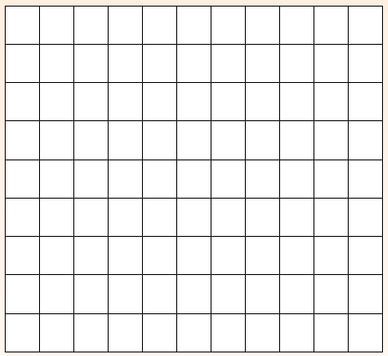
What shape is highlighted?
Why do we say it has 4 sides?



What shape is highlighted?
Why do we say it has 3 sides?



1. Draw on the square grid paper a shape with:
   a. 4 sides
   b. 6 sides
   c. 8 sides



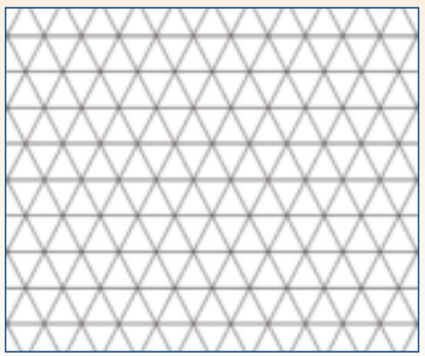
2. What shape does ____ form:

   a. _____

   b. _____

   c. _____

3. On the triangle grid paper a shape with:
   a. 3 sides
   b. 4 sides
   c. 5 sides
   d. 6 sides



4. What shape does ____ form:

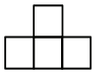
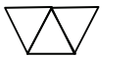
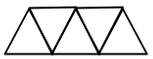
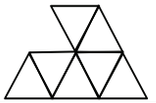
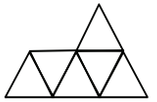
   a. _____

   b. _____

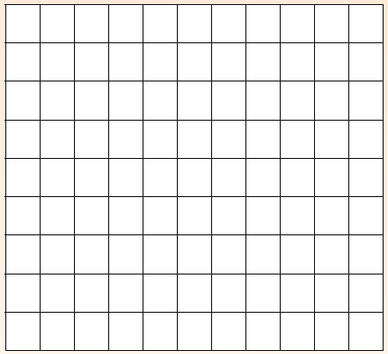
   c. _____

   d. _____

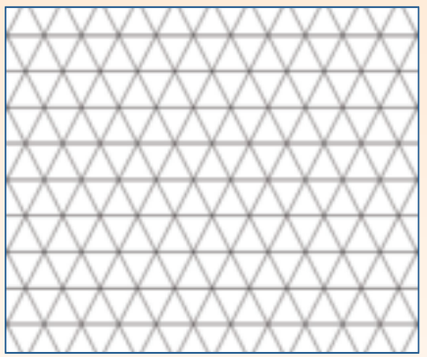
5. How many sides do these shapes have?

a. 	b. 	c. 	d. 
e. 	f. 	g. 	h. 

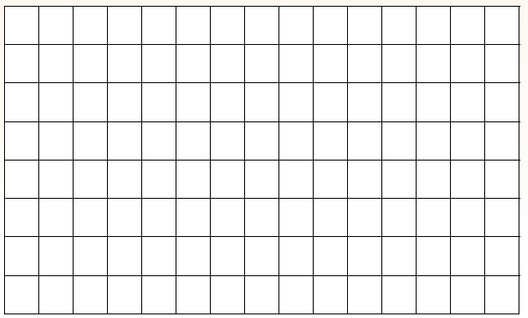
6. Use the grid paper to draw the following:
   a. 4-sided shape
   b. 10-sided shape
   c. 12-sided shape



7. Use the triangular paper to draw the following:
   a. 6-sided shape
   b. 9-sided shape
   c. 16-sided shape

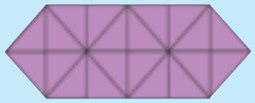


8. Use the grid paper below to design the composite shape that you would want your bedroom to look like.

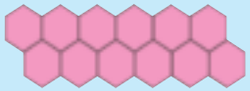


continued ☛

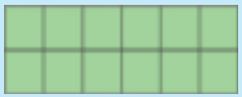
Composite shapes continued



A tessellation of triangles.



A tessellation of hexagons.



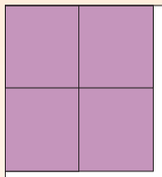
A tessellation of squares.

A tessellation is a combination of shapes fitting together exactly (with no gaps of overlaps between the shapes). Another word for tessellation is tiling.

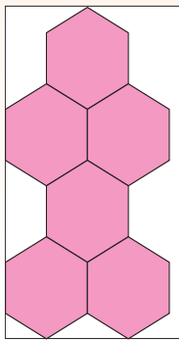


9. Show that these shapes tessellate by tiling the floor. We started it for you.

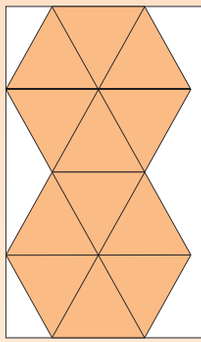
a.



b.

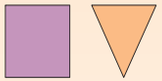


c.

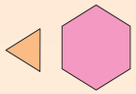


10. Show a tessellation pattern using these shapes.

a.

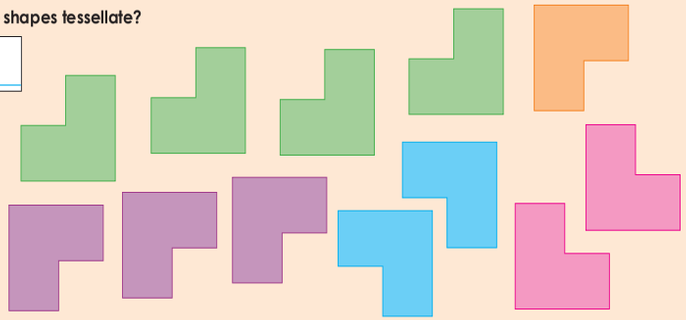


b.



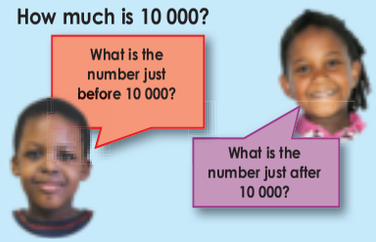
Tessellations

Will these shapes tessellate?



105 Numbers 0 – 10 000

How much is 10 000?





How many R100 notes do you need to make R10 000?



How many R200 notes do you need to make R10 000?

1. Round off the numbers to the nearest 10, 100 and 1 000.

	Nearest 10	Nearest 100	Nearest 1 000
a. 587			
b. 1 324			
c. 4 815			
d. 9 082			

2. Complete the following:

a. 9 000 + 300 + 20 + 5 = ____

b. 3 000 + 600 + 4 = ____

c. 1 000 + 700 = ____

d. 4 000 + 9 = ____

e. 8 + 6 000 + 80 = ____

3. What is the place value of the underlined digits in each number?

a. 1 738 = ____

b. 1 324 = ____

c. 1 780 = ____

d. 1 709 = ____

e. 1 899 = ____

4. Circle the number that is:

a. 4 000 more than 3 415: 3 815; 7 145; 7 415; 7 541; 7 514

b. 3 000 more than 6 201: 8 201; 9 201; 9 210; 6 501; 8 210

c. 500 more than 5 126: 5 526; 1 126; 8 126; 5 626; 7 400

d. 8 000 more than 1 333: 2 133; 9 333; 9 313; 2 833; 4 987

e. 1 000 more than 948: 1 948; 3 948; 2 984; 12 948; 2 498

5. Use any of these digits to make five different 4-digit numbers smaller than 9 999 but bigger than 5 000.

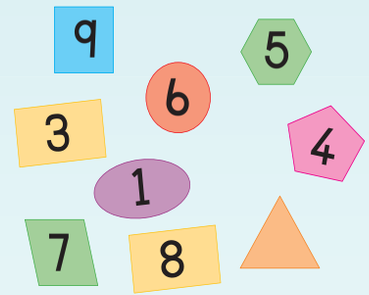
a. ____

b. ____

c. ____

d. ____

e. ____



6. Answer <, > or =

a. 1 218 ____ 1 181

b. 1 341 ____ 1 341

c. 1 948 ____ 1 849

d. 1 020 ____ 1 002

e. 1 409 ____ 1 490

7. Write the following in numbers:

a. Four thousand nine hundred and sixteen.

____

b. Five thousand three hundred and eighty one.

____

8. Write the following in words and say if it an even or odd number:

a. 1 478 ____ ____

b. 8 735 ____ ____

c. 7 004 ____ ____

d. 9 620 ____ ____



Bigger than and less than

Find 10 numbers in a newspaper that is bigger than 1 000 but smaller than 10 000.
How many numbers are closer to 1 000 than to 10 000?
What does the numbers tell us?

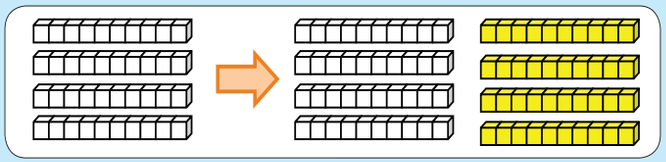
Sign: ____ Date: ____

106 Addition and subtraction using doubling and halving

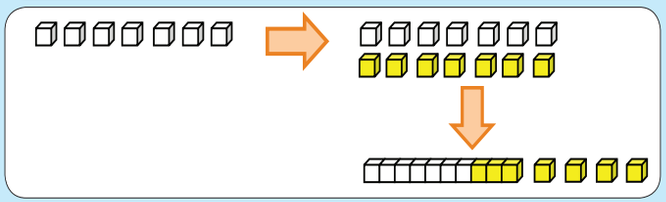
Double 47 is not a double that most people know by heart.
But you can break 47 down into tens and units: 40 + 7

We can then say and show

double 40



double 7



= 80 + 14
= 94

1. Double the following numbers:

a. 23
= double 20 + double 3
= 40 + 6
= 46

b. 36

c. 135

d. 1 253

2. Calculate. Make use of the example to guide you.

a. 23 + 25
= double 23 + 2
= 46 + 2
= 48

b. 36 + 38

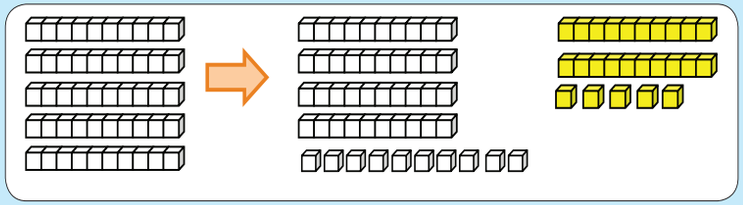
c. 135 + 138

d. 2 456

Half 58
Break 58 down in tens and units: 50 + 8

We can then say and show

Half 50



Half 8



= 25 + 4
= 29

3. Halve the following numbers:

a. 28
= half 20 + half 8
= 10 + 4
= 14

b. 64

c. 468

d. 8 482

e. 276

f. 7 770

Doubling and halving

My number is 15. I double it. I double it again. I add 100. I double it. I add 20. I double it. I add 20 again. I halve it. I minus 50. I halve it. I minus 50 again. I halve it. What is my number? _____

107 Addition and subtraction of 4-digit numbers: breaking down numbers

Term 4

Give the answer for:

3 000 + 400 + 70 + 2 =	3 472
8 000 + 200 + 90 + 4 =	
4 000 + 50 + 6 =	
9 000 + 300 + 8 =	
7 000 + 1 =	

Write in expanded notation:

7 934 =	7 000 + 900 + 30 + 4
5 678 =	
6 506 =	
9 500 =	
8 809 =	

1. Calculate the following.

Example:
8 + 9 = 17 **and** 17 = 10 + 7

a. 7 + 5 = ____ 70 + 50 = ____ 700 + 500 = ____

b. 9 + 6 = ____ 90 + 60 = ____ 900 + 600 = ____

c. 8 + 4 = ____ 80 + 40 = ____ 800 + 400 = ____

2. Calculate the following.

Example:
17 – 9 = 8 170 – 90 = 80 1 700 – 900 = 800

a. 8 – 4 = ____ 80 – 40 = ____ 800 – 400 = ____

b. 6 – 4 = ____ 60 – 40 = ____ 600 – 400 = ____

c. 9 – 3 = ____ 90 – 30 = ____ 900 – 300 = ____

3. Calculate the following.

Example:
7 348 + 1 571
= 7 000 + 300 + 40 + 8 + 1 000 + 500 + 70 + 1
= 7 000 + 1 000 + 300 + 500 + 40 + 70 + 8 + 1
= 8 000 + 800 + 110 + 9
= 8 919

a. 4 588 + 3 251 =

b. 6 439 + 2 280 =

c. 3 765 + 2 186 =

d. 5 782 + 2 999 =

e. 9 524 + 3 687 =

f. 2 921 + 8 651 =

4. Calculate the following.

Example:
8 437 – 3 274
= (8 000 + 400 + 30 + 7) – (3 000 + 200 + 70 + 4)
= (8 000 + 300 + 130 + 7) – (3 000 + 200 + 70 + 4)
= (8 000 – 3 000) + (300 – 200) + (130 – 70) + (7 – 4)
= 5 000 + 100 + 60 + 3
= 5 163

a. 6 539 – 2 296 =

b. 9 773 – 3 392 =

c. 9 269 – 4 190 =

d. 9 583 – 5 392 =

e. 8 956 – 3 254 =

f. 4 235 – 1578 =

Sign:

Date:

108 More addition and subtraction of 4-digit numbers: breaking down numbers

Add the following:

5 678 + 3 000 =	
8 678 + 200 =	
8 878 + 20 =	
8 898 + 1 =	

What do you notice?

Subtract the following:

5 678 – 3 000 =	
2 678 – 200 =	
2 478 – 20 =	
2 458 – 1 =	

What do you notice?

1. Calculate the following.

Example: 5 678 + 3 000 **= 8 678**

a. 6 435 + 40 = ____ b. 3 853 + 4 000 = ____

c. 8 482 + 7 = ____ d. 6 634 + 60 = ____

e. 9 842 + 50 = ____ f. 4 535 + 3 000 = ____

2. Calculate the following.

Example: 5 678 – 3 000 **= 2 678**

a. 7 579 – 3 000 = ____ b. 5 489 – 60 = ____

c. 6 634 – 500 = ____ d. 5 676 – 300 = ____

e. 6 435 – 4 = ____ f. 8 482 – 40 = ____

3. Complete the table. Always start with the given number.

	Add 1 000	Subtract 1 000	Add 100	Subtract 100	Add 10	Subtract 10	Add 1	Subtract 1
8 475								
6 382								
8 455								
5 383								
7 373								

4. Add the following by breaking down the number to be added.

Example: Calculate 6 352 + 2 584
6 352 + 2 000 → 8 352 + 500 → 8 852 + 80 → 8 932 + 4 → 8 936

a. 5 793 + 3 554 = ____

b. 6 982 + 2 075 = ____

c. 6 898 + 2 181 = ____

d. 1 023 + 7 169 = ____

5. Subtract the following by breaking down the number to be subtracted.

Example: Calculate 8 936 – 3 425
8 936 – 3 000 → 5 936 – 400 → 5 536 – 20 → 5 516 – 5 = 5 511

a. 9 954 – 3 512 = ____

b. 5 632 – 2 310 = ____

c. 7 692 – 4 451 = ____

d. 3 002 – 1356 = ____

Calculate more …

Solve the problems by identifying the questions, the numbers and the operation (addition or subtraction). Make a drawing if necessary and write down a number sentence. Solve the problem.

- What is the **sum** of R4 375 and R2 999?
- What is the **difference** between 6 796 m and 3 785 m?
- What is 3 951 g **and** 5 638 g together?
- What is the **total** distance of 6 749 km and 4 827 km?

Sign:

Date:

109 Addition and subtraction up to 4-digits: filling up the number

Revise: Round off the following to the:

Nearest ten
34 ≈ 30
75 ≈ 80

Nearest hundred
682 ≈ 700
345 ≈ 300

Nearest thousand
8 668 ≈ 9 000
9 432 ≈ 9 000

Revise: Fill up the following:

Tens
34 + 6 = 40, 345 + 5 = 350

Hundreds
430 + 70 = 500, 2 360 + 40 = 2 400

Thousands
2 300 + 700 = 3 000, 4 300 + 700 = 5 000

1. Round the following off to the nearest 10, 100 and 1 000.

Example: **Nearest ten** 34 ≈ 30
Nearest hundred 682 ≈ 700
Nearest thousand 8 668 ≈ 9 000

a. 9 531 b. 4 872 c. 6 467

2. Fill up the tens.

Example: 34 + **6** = 40
345 + **5** = 350

a. 1 428 b. 4 393
c. 3 783 d. 9 204

3. Fill up the hundreds.

Example: 430 + **70** = 500
2 360 + **40** = 2 400

a. 4 174 b. 6 572
c. 2 908 d. 2 614

4. Fill up the thousands.

Example: 2 300 + **700** = 3 000
4 300 + **700** = 5 000

a. 5 262 b. 7 423
c. 4 351 d. 2 942

5. Fill up the tens, hundreds and thousands.

	Fill up the tens	Fill up the hundreds	Fill up the thousands
a. **8 521**	8 5**21** + 9 = 8 530	8 **521** + 79 = 8 600	**8 52**1 + 479 = 9 000
b. **8 394**			
c. **6 182**			
d. **8 945**			
e. **9 473**			

6. Calculate the following.

Example: Calculate 4 688 + 65
4 688 + 65 = (4 688 + 12) – 12 + 65 = 4 700 + (65 –12) = 4 700 + 53 = 4 753

a. 2 768 + 97 =

b. 2 345 + 98 =

c. 5 734 + 97 =

d. 7 472 + 59 =

e. 4 436 + 85 =

Calculate more …

Make your own word problems with the following numbers and operations.
a. R6 300, R9 450 and 'difference'
b. 8 040 kg, 1 850 kg and 'altogether'
c. 'The sum of', 7 650 m and 1 490 m
d. 'Subtract', 9 460 millilitres and 5 379 millilitres.

110 Addition and subtraction up to 4-digits: filling up the tens

Revise the following by showing it on a number line. Round off the following to the:

Nearest ten
36 ≈ 40
82 ≈ 80

Nearest hundred
531 ≈ 500
865 ≈ 900

Nearest thousand
7 429 ≈ 7 000
5 836 ≈ 6 000

Revise: Fill up the following:

Tens
73 + 7 = 80; 321 + 9 = 330

Hundreds
320 + 80 = 400; 3 780 + 20 = 3 800

Thousands
3 200 + 800 = 4 000; 6 400 + 600 = 7 000

1. Round off the following to the nearest 10, 100 and 1 000

Example: **Nearest ten** 36 ≈ 40
Nearest hundred 531 ≈ 500
Nearest thousand 7 429 ≈ 7 000

a. 8 327 b. 2 067 c. 2 986

2. Fill up the tens.

Example: 73 + **7** = 80; 321 + **9** = 330

a. 9 012 b. 4 592
c. 6 124 d. 2 312

3. Fill up the hundreds.

Example: 320 + **80** = 400; 3 780 + **20** = 3 800

a. 5 778 b. 6 643
c. 2 892 d. 2 166

4. Fill up the thousands.

Example: 3 200 + **800** = 4 000; 6 400 + **600** = 7 000

a. 4 988 b. 4 512
c. 4 974 d. 7 156

5. Fill up the tens, hundreds and thousands.

	Fill up the tens	Fill up the hundreds	Fill up the thousands
4 471	4 47**1** + 9 = 4 480	4 **47**1 + 29 = 4 500	**4 471** + 529 = 4 500

	Fill up the tens	Fill up the hundreds	Fill up the thousands
a. 5 243			
b. 4 224			
c. 1 276			
d. 6 131			

6. Calculate the following.

Example: 3 648 + 85
= (3 648 + **15** + 85) – **15**
= (3 648 + 100) -15
= 3 748 – 15
= 3 733

a. 9 383 + 49 = b. 6 485 + 46 = c. 7 399 + 36 =

d. 5 044 + 78 = e. 2 597 + 57 = f. 3 243 + 88 =

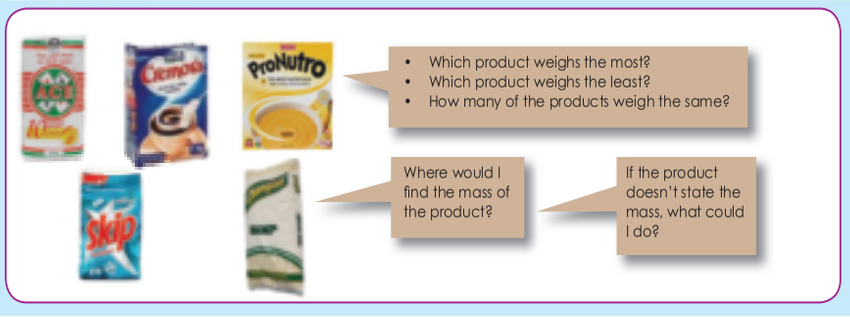
g. 1 252 + 69 = h. 8 184 + 68 = i. 4 164 + 65 =

Calculate the following.

Make your own word problems with the following numbers and operations.
- R5 300, R8 400 and 'difference'
- 4 387 kg, 1 050 kg and 'altogether'.
- The 'sum' of, 5 400 m and 6 810 m.
- 'Subtract' 8 540 millilitres and 7 698 millilitres.

Sign:
Date:

111 Heavier or lighter



1. Circle the lightest object.



2. Arrange from heaviest to lightest.

Objects	Heaviest to lightest
a. Feather, elephant, lunch box.	
b. House, apple, four chairs.	
c. Motor car, two apples, ten bricks.	
d. Tennis ball, full paint tin, empty bucket.	
e. Shoes, socks, television set.	

3. Study the objects below and answer the questions.



a. Which item is the heaviest? _____

b. Which item is the lightest? _____

c. Which items have the same mass? _____

d. If I had two boxes of washing powder, what would the mass be?

_____

e. If I had three packets of samp, what would the mass be?

_____

Find pictures of three objects that have a mass less than 1 kg.

112 Measuring instruments for mass and weight



We use **scales** to measure **mass** and **weight**. Most people use both words as if they are the same, though they are different. The **mass** of an object is how much matter it contains. It does not change. The **weight** of an object changes according to gravity. An objects weighs six times more on earth than on the moon, and weighs nothing in empty space, even though its mass remains the same everywhere.
A **balance scale** measures **mass**. A **spring scale** measures **weight**. On earth both types of scale give us the same approximate reading, so for everyday practical activities we can also use spring scales (such as bathroom and kitchen scales) to measure mass.

1. What would you weigh with the following measuring instruments? Would you weigh it in kilograms or grams?

Type	For measuring:	Kilograms or grams
Kitchen scale 		
Bathroom scale 		
Spring scale 		
Balance scale 		

In an **analogue** scale the stretching of the spring moves a pointer to show what the weight is.

In a **digital** scale the stretching of the spring is measured by an electric instrument which records the weight in numbers on a small display screen.

2. Which of these scales is digital?

a.  ☐

b.  ☐

c.  ☐

d.  ☐

3. Would you measure the mass of the following in grams or kilograms?

a. A cow: _____

b. Flour for baking a cake: _____

c. Your own mass: _____

d. A coin: _____

4. Answer the following questions.

a. Will a bag full of feathers have a larger mass than the same size bag half filled with stones? _____

b. We use grams (g) and kilograms (kg) when measuring mass.
   i. Which unit of measurement do you think we use to measure heavier objects? _____
   ii. Which unit of measurement do you think we use for lighter objects? _____

c. We make use of scales to weigh objects.
   i. Is there only one type of scale? _____
   ii. Name some of the types of scales we use and what we use them for.

Measuring the ingredients

My mother baked a cake. What did she use to measure the ingredients?

113a Weighing objects

Your teacher will give you a variety of objects that each weigh $2\frac{1}{2}$ kg.

These products below or the ones your teacher gave you all weight $2\frac{1}{2}$ kg. You can prove it by weighing them on a scale.







We say each weighs $2\frac{1}{2}$ kgs

Remember that the abbreviation for kilogram is kg and for gram is g.

There are 1 000 g in 1 kg. That means $\frac{1}{2}$ kg is 500 g

1. What is the maximum reading on these scales?

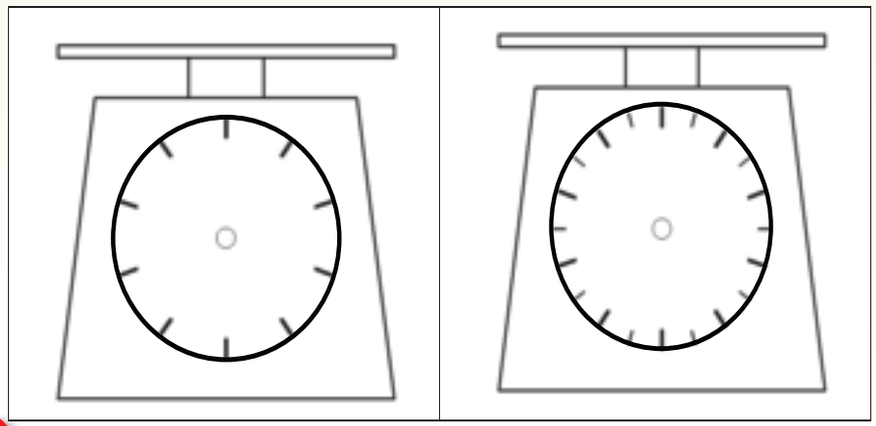
a.



b.

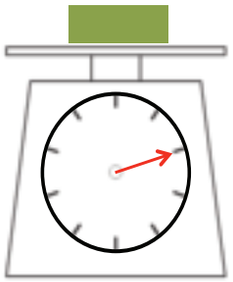


2. Fill in the intervals on these scales with a maximum reading of 10 kg.

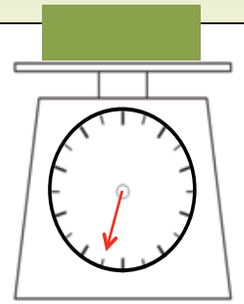


3. How much do the objects weigh on these scales which have a maximum reading of 10 kg?

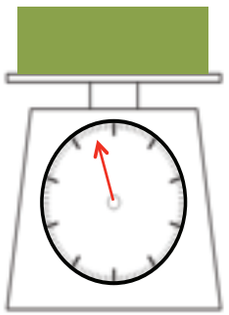
a.



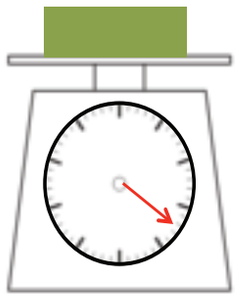
b.



c.



d.



4. Calculate the total mass of all the objects in Question 3.

Weighing objects continued

5. Do this practical activity using a kitchen scale and suitable objects.

We see that the apple weighs 167 g.



Digital kitchen scale.

Find objects that weigh about:
- 20 g
- 90 g
- 35 g
- 67 g
- 500 g

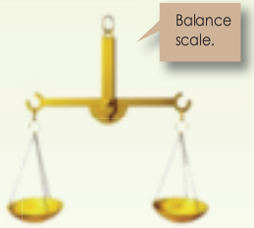


Analogue kitchen scale.

The meat weighs 2 kg 850 g

Find objects that weigh about:
- 3 kg
- 1 kg 500 g
- 3 kg 200 g
- 2 kg 900 g
- 4 kg 750 g

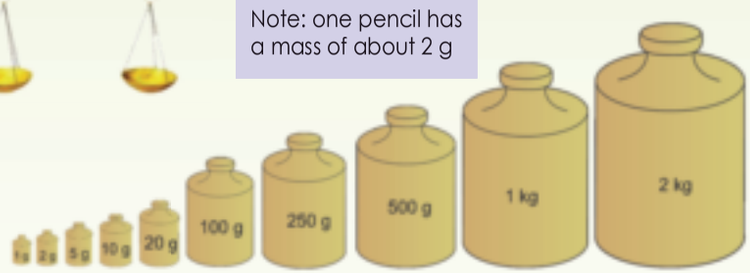
6. Use the information below to complete the table.



Balance scale.

When we use a balance scale, we place the object on one side and mass pieces (weights) on the other side and balance it.

Note: one pencil has a mass of about 2 g



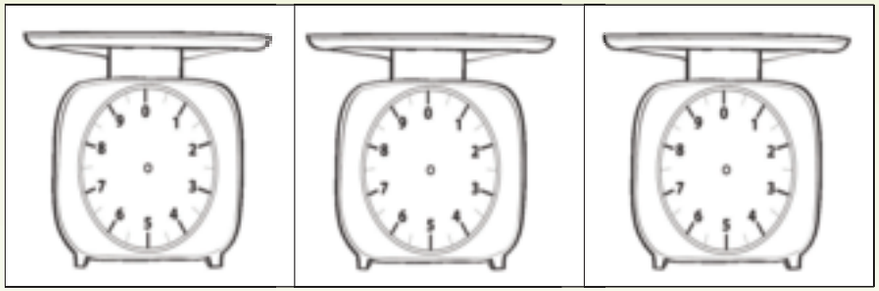
Number of pencils	Total mass of pencils	Mass pieces	Total mass	Is it balanced
a. 3	6 g	5 g; 1 g	6 g	Yes
b. 10				
c. 22				
d. 33				
e. 59				

7. What mass pieces would you use to make the following:

Total mass	Mass pieces used		Total mass	Mass pieces used
3 g			300 g	
10 Kg			1 000 g	
22 g			575 g	
33 g			865 g	
9 Kg			624 g	

8. Draw the pointer on this scale which has a maximum reading of 10 kg to show the following.

2 kg | 3 kg 500 g | 4 kg 700 g

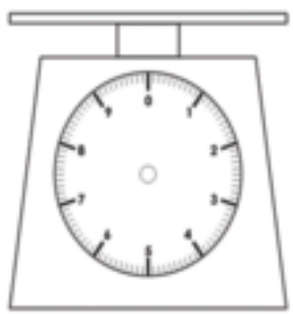


Heavy

Write down the names of five objects that weigh more than 2 kg 500 g.

Draw a picture of each.

114 Mass: converting measuring units



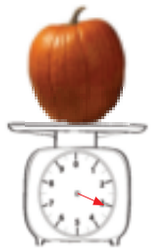
Revise the following:

- What do the intervals from 0 to 1 mean on this 10 kg scale?
- Let us count: 100 g, 200 g, 300 g, 400 g, 500 g, 600 g, 700 g, 800 g, 900 g, 1 000 g.
- We say there are 1 000 grams in 1 kilogram.

1. How much do the objects weigh? Write your answer in:

i. kilograms and grams
ii. grams

a.



i._____
ii._____

b.



i._____
ii._____

c.



i._____
ii._____

d.



i._____
ii._____

2. Show the following on this 10 kg kitchen scale.

a. 4 kg 500 g



b. 6 kg 300 g



c. 2 kg 100 g



d. 9 kg 500 g



e. 4 kg 200 g



f. 3 kg 600 g



3. Write the following in grams.

a. 2 kg 250 g = 2 250 g

b. 3 kg 500 g = _____

c. 4 kg 150 g = _____

d. 1 kg 200 g = _____

e. 6 kg 750 g = _____

f. 8 kg 950 g = _____

4. Write the following in kilograms and grams.

a. 4 150 g = 4 kg 150 g

b. 6 550 g = _____

c. 7 650 g = _____

d. 5 250 g = _____

e. 9 950 g = _____

f. 8 750 g = _____

Weighing the stew

My mother bought 2 kg 250 g of meat and 1 500 g of vegetables for her stew. How much do the ingredients for the stew weigh?

115 More weighing objects

Which measuring instruments would you use to weigh objects? What kinds of objects would you weigh with them?



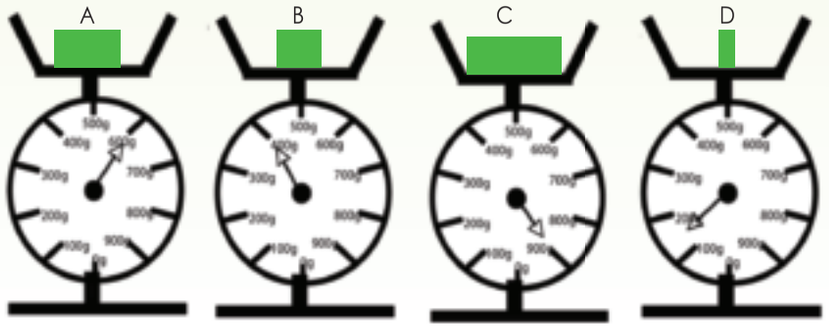




1. Colour in the blocks that will make 1 kg.

a.	1 kg	100 g	500 g	500 g	200 g	50 g
b.	1 kg	250 g	250 g	100 g	150 g	500 g
c.	1 kg	250 g	750 g	150 g	100 g	125 g
d.	1 kg	50 g	150 g	75 g	950 g	250 g
e.	1 kg	500 g	125 g	50 g	125 g	250 g

2. What does each object weigh?



_____ _____ _____ _____

3. Use the objects on the left to estimate whether each object is heavier or lighter than kilogram or gram.





a. Boots  _____

b. Paper  _____

c. Rope  _____

d. Baby bottle  _____

e. Sugar  _____

f. Banana  _____

4. A bag of maize meal contains 10 kg. Busi used 2 kg in the first week and 3 kg the next week. She then divided the rest equally into 2 separate bags. What will be the mass each of the 2 remaining bags?

Continue on an extra sheet of paper

Gram fun…

Look at a newspaper or advertising mail (sometimes called 'junk mail').

Find 10 items for which measurements are given in grams.



Sign: _____

Date: _____

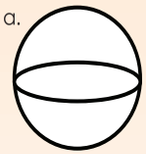
Properties of 3-D objects

Give examples of 3-D objects that slide or roll or roll and slide

Examples of 3-D objects	Slide	Roll	Roll and slide
			

What determines whether an object will roll or slide?

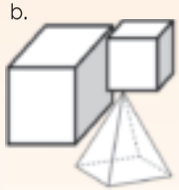
1. Look at the 3-D objects and answer the questions.

a. 

i. Name this object.

ii. Does it have a flat or curved surface?

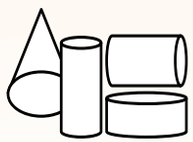
iii. Can a 3-D object with a curved surface roll or slide?

b. 

i. Name the objects.

ii. Do they have flat or curved surfaces?

iii. Can a 3-D object with a flat surface roll or slide?

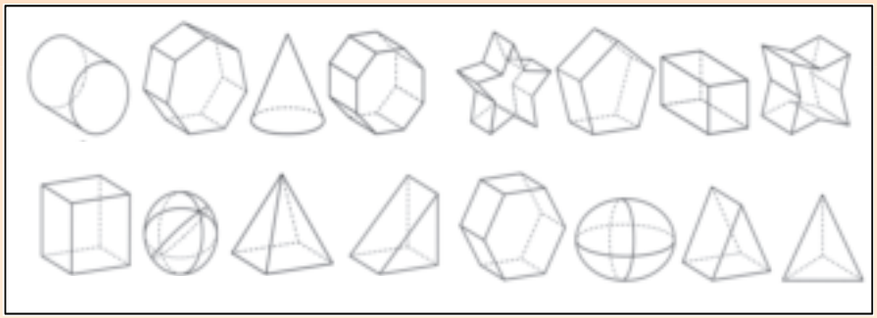
c. 

i. Name the objects.

ii. Do they have flat or curved surfaces?

iii. Can a 3-D object with a curved and flat surface roll or slide?

2. Colour the shapes with both flat and curved surfaces.



3. Fill in the missing information in the table.

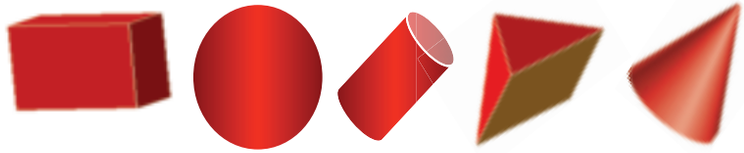
3-D object	Name of 3-D object	Names of shapes that make up the faces	Flat or curved surfaces
a. 			
b. 			
c. 			
d. 			

3-D objects that make your house

Think about your house (the building itself). What kinds of 3-D objects make up your house? Would your house slide or roll?

Making 3-D objects

Find objects in your environment that looks similar to the object below.

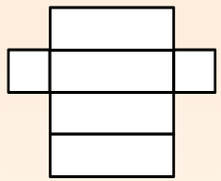


Match the words with the objects:
Sphere, square-based pyramid, cone, cylinder, rectangular prism.

1. Look at the nets below.

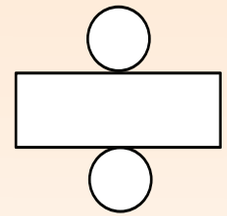
a. What shapes can you see?
b. How many faces can you see?
c. What 3-D object will it form?

A.



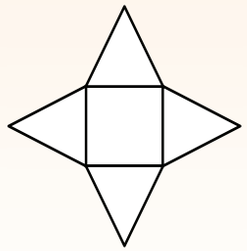
a. _____
b. _____
c. _____

B.



a. _____
b. _____
c. _____

C.



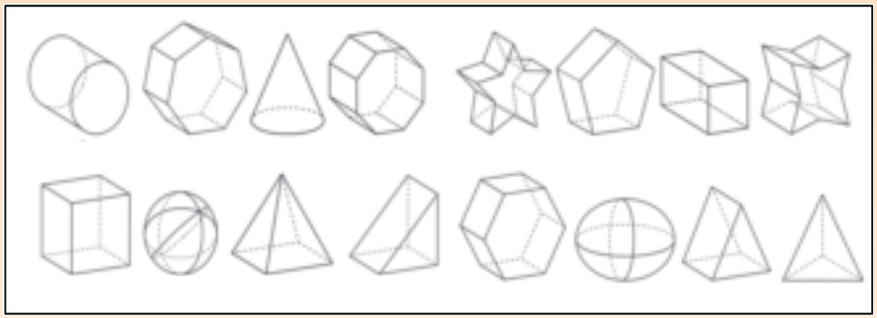
a. _____
b. _____
c. _____

D.

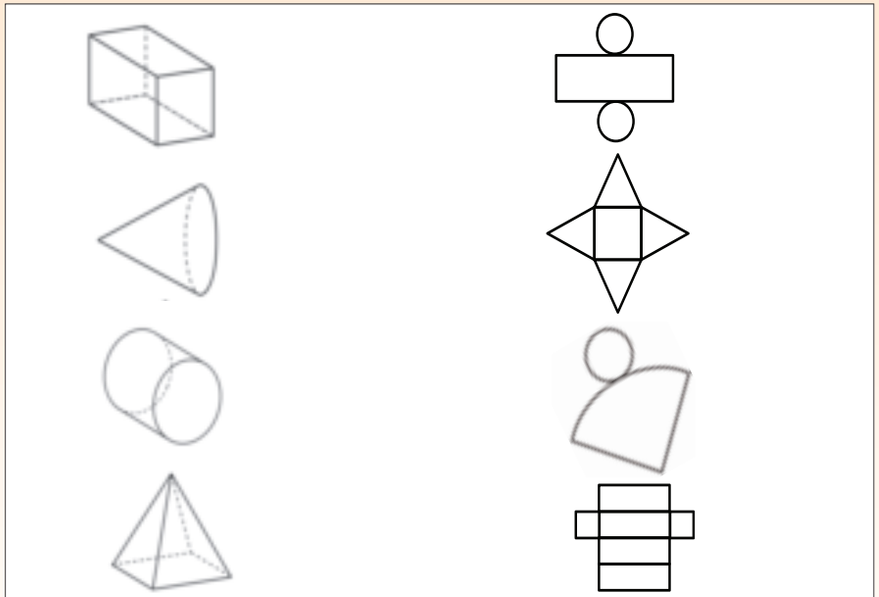


a. _____
b. _____
c. _____

2. Colour the shapes with only flat surfaces.



3. Match the nets and the 3-D objects.

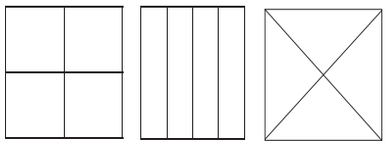


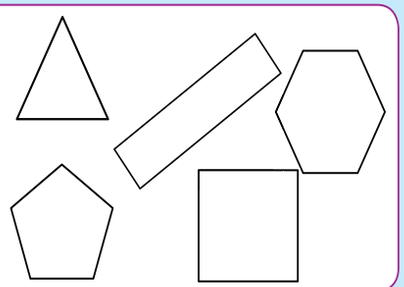
Design your own 3-D object.

118 Describing, ordering and comparing common fractions

Look at the following shapes. We have divided the square into quarters.

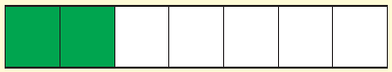
Are these the only ways to show quarters on a square?





Can you use all the other shapes to show halves, thirds and quarters?

In this diagram the following important information is given.



i. The rectangle has been divided or cut up into seven pieces; these pieces are called sevenths.

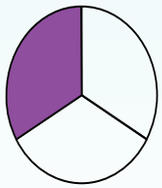
ii. Two sevenths $\frac{2}{7}$ have been shaded.

iii. Five sevenths $\frac{5}{7}$ have not been shaded.

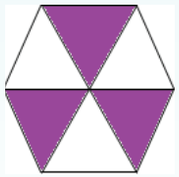
We can use this important information to help us describe the fraction.

1. Use the information below to describe the fraction shapes.

a.



b.



i. _____

_____

ii. _____

_____

iii. _____

_____

i. _____

_____

ii. _____

_____

iii. _____

_____

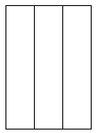
2. Colour the shape according to the information given.

a.



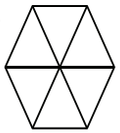
One half is coloured.

b.



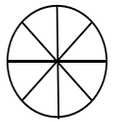
Two thirds are coloured.

c.



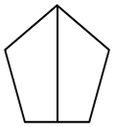
Four sixths are coloured.

d.



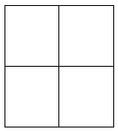
Four eights are coloured.

e.



No halves are coloured.

f.

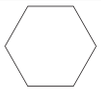


One quarter is not coloured.

3. Divide and colour the shapes according to the information given.

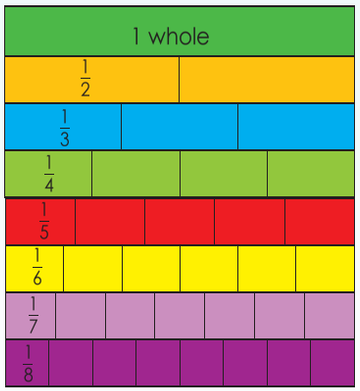
a.  $\frac{3}{4}$

c.  $\frac{6}{8}$

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

d.  $\frac{5}{6}$

4. Use the fraction wall to help you. Fill in > , < or = .



a.	$\frac{1}{3}$	☐	$\frac{1}{4}$
b.	$\frac{4}{7}$	☐	$\frac{2}{5}$
c.	$\frac{2}{8}$	☐	$\frac{1}{4}$
d.	$\frac{2}{5}$	☐	$\frac{1}{2}$
e.	$\frac{4}{8}$	☐	$\frac{3}{4}$
f.	$\frac{4}{5}$	☐	$\frac{1}{1}$

Fractions in order

Order the following fractions: $\frac{1}{2}$, $\frac{4}{6}$, $\frac{1}{3}$, $\frac{3}{4}$, $\frac{5}{8}$, 1

119 A fraction of a number

What do you think the questions will be? We did the first one for you.

My sister bought 8 lollipops. 4 lollipops are strawberry flavour. What fraction is strawberry flavour?		







1. Draw a picture to solve the problems.

a. One tenth of the 30 bananas is rotten. How many bananas are rotten?

b. There are 18 chairs in the classroom room. One third of them are green in colour. How many chairs are not green in colour?

c. One half of the 6 people in a taxi are going to town. What fraction of people are going to town?

d. There are 64 children in the park, three sixths of them are wearing blue shoes. How many children in the park are wearing blue shoes?

Children at my party

Six tenths of the children at my party like chocolate ice-cream.

How many children like chocolate ice-cream?

_____

How many do not like chocolate ice-cream?

_____

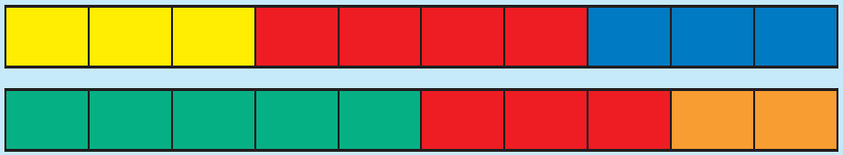


Sign:

Date:

Tenths

Each strip represents one whole. Describe it in fractions using the colours.



1. Write which part of the fraction is coloured and which part is not.

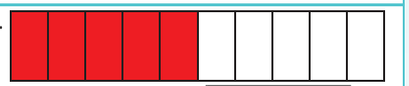
a.



Fraction coloured: $\frac{2}{10}$

Fraction not coloured: $\frac{8}{10}$

b.



Fraction coloured:

Fraction not coloured:

c.



Fraction coloured:

Fraction not coloured:

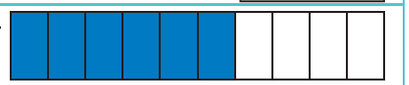
d.



Fraction coloured:

Fraction not coloured:

e.



Fraction coloured:

Fraction not coloured:

2. Colour in to show that the following are equal

a. $\frac{5}{10} = \frac{1}{2}$



b. $\frac{4}{10} = \frac{2}{5}$



c. $\frac{6}{10} = \frac{3}{5}$

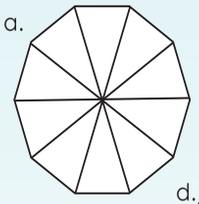
d. $\frac{8}{10} = \frac{4}{5}$

3. Colour in both diagrams in every box.

$\frac{8}{10}$	Three tenths	Eight tenths

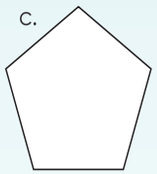
4. If we divide a shape into ten equal pieces we can write each piece as $1 \div 10 = \frac{1}{10}$. Show $1 \div 10$ on each shape. We did the first one for you.

a.

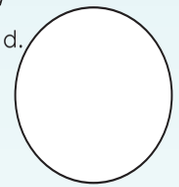


b.

c.



d.



e.

5. If $1 \div 10 = \frac{1}{10}$. What is:

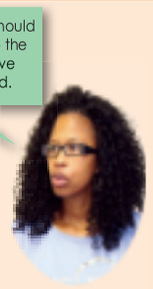
a. $1 \div 2 =$ b. $1 \div 3 =$ c. $1 \div 4 =$

d. $1 \div 5 =$ e. $1 \div 6 =$ f. $1 \div 7 =$

Decimal diagrams

Draw diagrams that represent these fractions:





More tenths

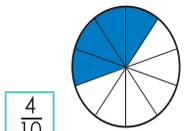
What fraction of the food did we eat? What fraction was left?



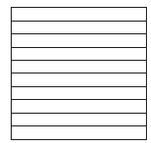


1. Write which part of the fraction is coloured and which fraction not. Then show the same fraction on the different shape.

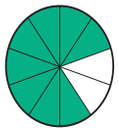
a.

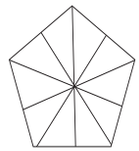


$\frac{4}{10}$ $\frac{6}{10}$

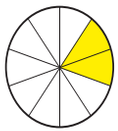


b.



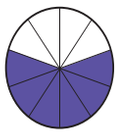


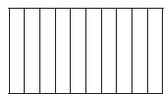
c.



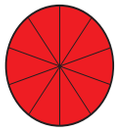


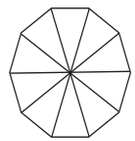
d.



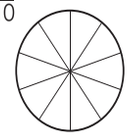
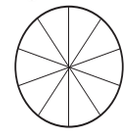
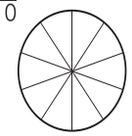


e.





2. Colour in the parts of the circle

$\frac{10}{10}$	Eight tenths	$\frac{4}{10}$
		

3. Show the following by making drawings. I have 10 sweets. I divide it between ___ children. What fraction of the sweets will each child get.

a. 2 children

b. 5 children

4. Give a fraction that is equal to:

a. $\frac{2}{10}$ = ☐

b. $\frac{4}{10}$ = ☐

c. $\frac{6}{10}$ = ☐

d. $\frac{8}{10}$ = ☐

Ten fingers

How many fingers have got finger puppets on? Give your answer in fractions.



Fraction problems

How fast can you complete the following?

$\frac{1}{4} + \frac{2}{4} =$	$\frac{2}{8} + \frac{3}{8} =$	$\frac{3}{7} + \frac{1}{7} =$
$\frac{4}{6} + \frac{1}{6} =$	$\frac{1}{5} + \frac{2}{5} =$	$\frac{4}{8} + \frac{1}{8} =$
$\frac{1}{3} + \frac{1}{3} =$	$\frac{5}{8} + \frac{2}{8} =$	$\frac{3}{5} + \frac{1}{5} =$
$\frac{1}{4} + \frac{1}{4} =$	$\frac{2}{6} + \frac{3}{6} =$	$\frac{6}{8} + \frac{1}{8} =$

1. Use the pictures or diagrams to help you to solve the problem.

a. There are eight pieces of pizza. Sipho ate five eighths of the pizza for lunch. He ate one eighth of the pizza for supper. How much pizza has he eaten in all?



b. There were three fourths of a litre of milk in the refrigerator. There was also one fourth of a litre of chocolate milk. How much more plain milk was there than chocolate milk?



c. On Monday Ben picked one sixth of a kilogram of strawberries. On Tuesday he picked three sixths of a kg of strawberries. What is the total mass of strawberries Ben picked?



d. There were 5 bananas on the counter. Two fifths of the bananas were eaten yesterday. One fifth of the bananas were eaten today. What fraction of the bananas has been eaten in all?



Make your own problems

Look at the pictures and make your own fraction word problems.

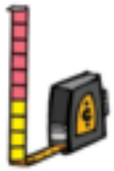
1 litre



1 kilogram



1 metre



More fraction problems

How fast can you complete the following:

$\frac{1}{7} + \frac{3}{7} =$	$\frac{2}{8} + \frac{5}{8} =$	$\frac{1}{4} + \frac{1}{4} =$
$\frac{1}{3} + \frac{2}{3} =$	$\frac{3}{6} + \frac{2}{6} =$	$\frac{3}{8} + \frac{3}{8} =$
$\frac{4}{8} + \frac{3}{8} =$	$\frac{1}{6} + \frac{4}{6} =$	$\frac{3}{5} + \frac{2}{5} =$
$\frac{2}{4} + \frac{1}{4} =$	$\frac{6}{8} + \frac{2}{8} =$	$\frac{1}{5} + \frac{3}{5} =$

1. Solve the following by making your own drawing or diagram.

a. Bongi ate three eighths of her orange before lunch and four eighths of her orange after lunch. How much of her orange did she eat in all? Draw a picture to show your answer.

b. Ben has six rand. He spent four sixths of his money on sweets and one sixth of his money on milk. What fraction of his money did he spend altogether? Draw a picture to show your answer.

c. Muzi added four fifths of a cup of flour to the chocolate cake. He added one fifth of a cup of flour to the strawberry cake. How much more flour was needed for the chocolate cake? Draw a picture to show your answer.

d. On Friday James ate a third of a kilogram of strawberries. On Saturday he ate two thirds of a kilogram of strawberries. What was the total weight of the strawberries that James ate? Draw a picture to show your answer.

Cutting the cake

My mother baked a cake. She cut it into 10 equal slices. We ate 6 equal pieces.

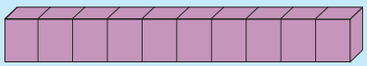
- What fraction of the cake did we eat?
- What fraction of the cake did we not eat?
- Write it as a sum.

Sign:

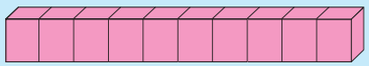
Date:

Grouping and sharing

Share the small cubes in this block between **5** children.



Share the small cubes in this block between **3** children.



1. Complete the following:

a. You have 97 objects.
Divide them into groups of 4.

How many do you have in a group? ☐

How many objects are left over that do not fit into a group? ☐

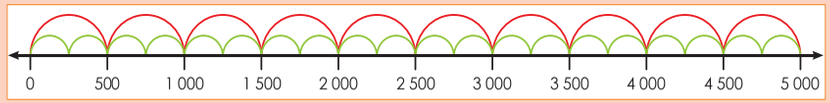
Draw a picture of your groups.

b. Do a division sum for 97 divided by 4. ☐

2. Complete the table. If you need more space for your picture, use a separate sheet of paper to draw it.

	How many do you have in a group?	How many objects are left over that do not fit into a group?	A picture	Division sum
Divide 10 objects into 5 groups.				
Divide 100 objects into 8 groups.				
Divide 100 objects into 7 groups.				
Divide 100 objects into 6 groups.				

3. Look at the number line and answer the questions below:



a. How many red groups do you have from 0 – 5 000? ☐

b. What is the size of each group? ☐

c. Write a multiplication sum for the red groups. ☐

d. Write a division sum for the red groups. ☐

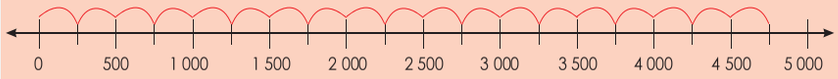
e. How many green groups do you have from 0 – 5 000? ☐

f. What is the size of each group? ☐

g. Write a multiplication sum for the green groups. ☐

h. Write a division sum for the green groups. ☐

4. We have shown the division of 4 750 by 250 on this number line. Answer the questions.



a. How many groups do you have? ☐

b. How much is left after you have made all the groups? ☐

c. Complete the number sentence: **4 750 ÷ 250 = _____ rem _____**

How many groups?



How many groups can you make that will give you a total of 5 000? Remember all the groups must be the same size.

Sign:

Date:

125 Division: 3-digits by 1-digit

Quick recall.

100 ÷ 2 =	500 ÷ 5 =	900 ÷ 9 =	200 ÷ 2 =	400 ÷ 4 =
300 ÷ 3 =	600 ÷ 3 =	800 ÷ 4 =	500 ÷ 2 =	600 ÷ 6 =
700 ÷ 2 =	100 ÷ 5 =	450 ÷ 5 =	300 ÷ 2 =	900 ÷ 3 =
400 ÷ 2 =	800 ÷ 8 =	640 ÷ 8 =	360 ÷ 6 =	700 ÷ 5 =
200 ÷ 5 =	700 ÷ 7 =	960 ÷ 3 =	72 ÷ 6 =	450 ÷ 9 =

Example 1:

633 ÷ 3 = (600 + 30 + 3) ÷ 3
= (600 ÷ 3) + (30 ÷ 3) + (3 ÷ 3)
= 200 + 10 + 1
= 211

Test the answer.

Example 2:

589 ÷ 4 = (500 + 80 + 9) ÷ 4
= (500 ÷ 4) + (80 ÷ 4) + (9 ÷ 4)
= 125 + 20 + 2 rem 1
= 147 rem 1

Test the answer.

1. Show your calculations in your writing book:

a. 481 ÷ 3 =
b. 635 ÷ 3 =
c. 744 ÷ 3 =
d. 815 ÷ 3 =
e. 965 ÷ 3 =

2. Show your calculations in your writing book:

a. 267 ÷ 5 =
b. 578 ÷ 5 =
c. 650 ÷ 5 =
d. 812 ÷ 5 =
e. 942 ÷ 5 =

3. Show your calculations in your writing book:

a. 218 ÷ 7 =
b. 350 ÷ 7 =
c. 482 ÷ 7 =
d. 678 ÷ 7 =
e. 928 ÷ 7 =

4. Show your calculations in your writing book:

a. 150 ÷ 8 =
b. 267 ÷ 8 =
c. 615 ÷ 8 =
d. 863 ÷ 8 =
e. 941 ÷ 8 =

5. Show your calculations in your writing book:

a. 230 ÷ 9 =
b. 349 ÷ 9 =
c. 487 ÷ 9 =
d. 865 ÷ 9 =
e. 985 ÷ 9 =



Example 3:

```
    7 2
6 | 4 3 2
  4 2 0    6 × 7 0
    1 2
    1 2    6 × 2
      0
```

6. Say in each case whether there is a remainder or not, and if there is, then what it is. Show all your calculations in your writing book.

a. 157 ÷ 8 = ☐ b. 648 ÷ 4 = ☐ c. 531 ÷ 9 = ☐

d. 842 ÷ 6 = ☐ e. 914 ÷ 5 = ☐ f. 999 ÷ 7 = ☐

7. The farmer collected 574 eggs. He packed them in half a dozen containers. How many containers did he fill? Were there any eggs left? Check you answer.

How fast can ...

How fast can you calculate the sums below?

100 ÷ 2 ÷ 5 ÷ 2 ÷ 1 = ☐

64 ÷ 2 ÷ 2 ÷ 2 ÷ 2 = ☐

Make your own sum.

☐ ÷ ☐ ÷ ☐ ÷ ☐ ÷ ☐ = ☐

If you are making orange juice and you mix one part orange to four parts water, then the ratio of orange to water will be 1:4.

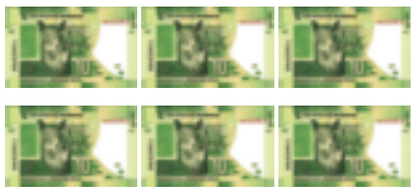
If you use 1 litre of orange, you will use 4 litres of water. **1 to 4**

If you use 2 litres of orange, you will use 8 litres of water. **2 to 8**

If you use 10 litres of orange, you will use 40 litres of water . **10 to 40**

1. Thami and Sipho divided their money in the following ratios. Say how much money they got each time. Colour Thami's money red and Sipho's money blue.

a. R60 in the ratio of 4:2



b. R80 in the ratio of 2:6



c. R400 in the ratio 1:3



d. R300 in the ratio 3:3



e. R800 in the ratio 3:1



f. Make your own drawing to show. R100 in the ratio 8:2

2. Solve the problems

Example:
Thandi and Lisa win R50 between them. They agree to divide the money in the ratio 2:3. How much does each person receive?

Order
It's important to notice what order the parts of the ratio are written in. The ratio 2:3 is not the same as 3:2.
If we swap the order to 3:2 then Thandi would get more than Lisa.
To keep it the same as in the example we could say that the ratio of Lisa's money to Thandi's would be 3:2

Thandi gets 2 parts and Lisa gets 3 parts. This is a total of 5 parts.

They have R50. R50 divided by 5 parts = 10

Thandi gets 2 parts x R10 = R20.
Lisa gets 3 parts x R10 = R30

a. John and Manoj win a prize of R800, which they agree to share in the ratio 5:3. How much does each person get?

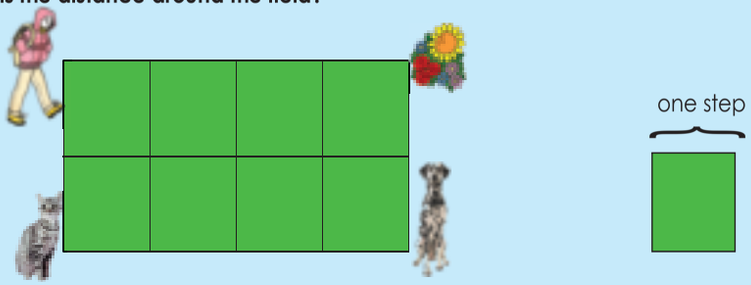
b. A necklace is made using red and blue beads in the ratio 4:2. If there are 60 beads in the necklace:

i) How many are red?

ii) How many are blue?

Perimeter, length and width

What is the distance around the field?



1. How many steps will the person walk:

a. To the flowers? _____

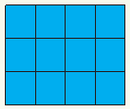
b. From the flowers to the dog? _____

c. From the dog to the cat? _____

d. From the cat to where the person started walking? _____

e. What is the total distance that the person walked? _____

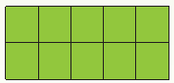
2. What is the total distance around these shapes.



a. _____ units.



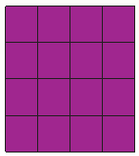
b. _____ units.



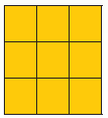
c. _____ units.



d. _____ units.



e. _____ units.



f. _____ units.

We call the distance around a shape its <u>perimeter.</u>



3. Use the grid below and make drawings of shapes with the following perimeter:

a. A blue shape with a perimeter of 16

b. A red shape with a perimeter of 12.

c. A green shape with a perimeter of 18.

d. A yellow shape with a perimeter of 8.

e. A brown shape with a perimeter of 10.

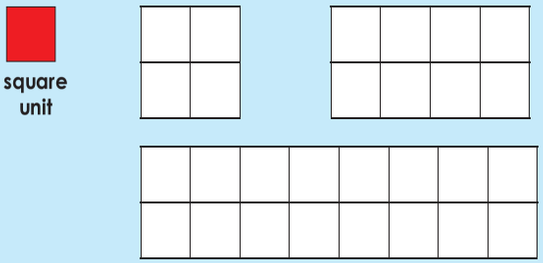
Perimeter at school



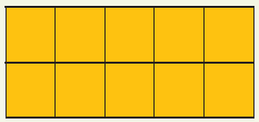
How many steps will you take around the soccer field/netball court/ rugby field/ tennis court?

Area measurement in square units

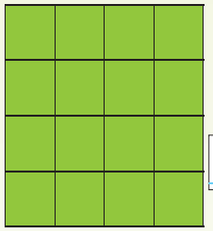
How many square units will it take to cover the square and rectangles?



1. How many square units are there in each of these shapes?

a. 

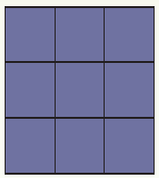
square units

b. 

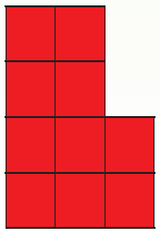
square units

c. 

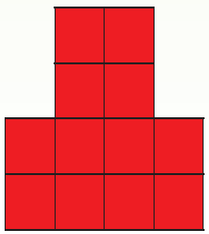
square units

d. 

square units

e. 

square units

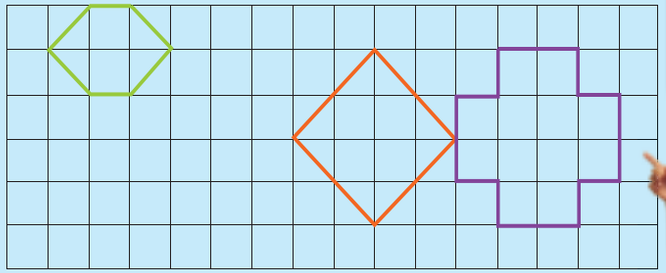
f. 

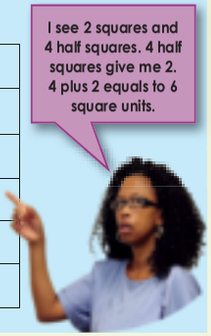
square units

2. Draw different shapes with the same area. You can use Cut-out 8 squared paper for this question.

a. A rectangle with 12 square units.	b. A different rectangle with 12 square units.	c. A different rectangle with 12 square units.
d. A square with 16 square units.	e. A rectangle with 16 square units.	f. A different square with 16 square units.
g. Any shape with 18 square units.	h. Any shape with 18 square units.	i. Any different shape with 18 square units.

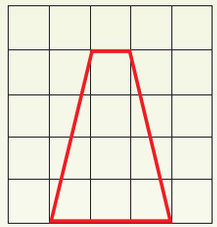
Count the square units.



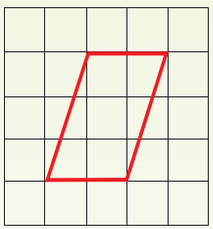


1. How many square units in each shape?

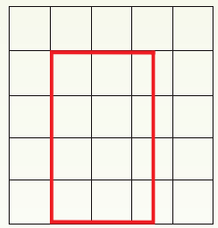
a.



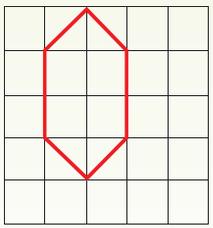
b.



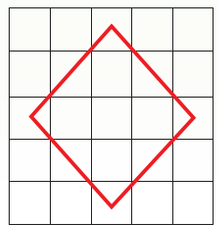
c.



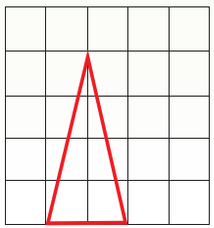
d.



e.



f.

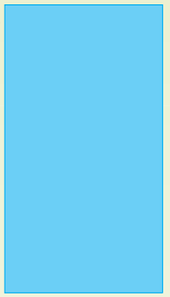


2. Measure and label the length and the width of the sides.

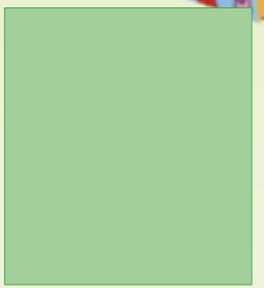
a.



b.



c.



3. Use your ruler and measure the sides of the shapes. Give your answer in mm.



a.



Length: _____

Width: _____

Total distance around the shape: _____

b.

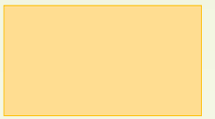


Length: _____

Width: _____

Total distance around the shape: _____

c.



Length: _____

Width: _____

Total distance around the shape: _____

d.



Length: _____

Width: _____

Total distance around the shape: _____

e.



Length: _____

Width: _____

Total distance around the shape: _____

f.

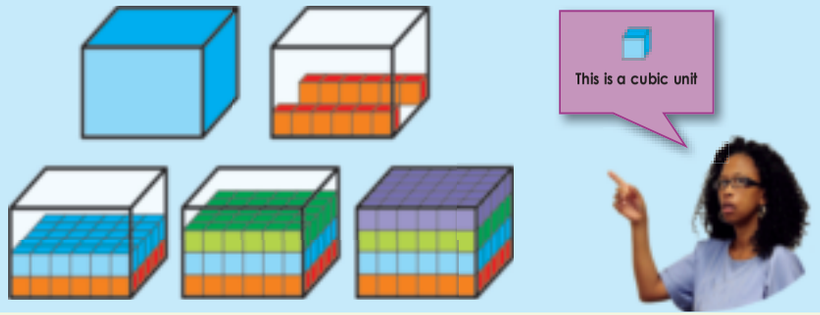


Length: _____

Width: _____

Total distance around the shape: _____

How many cubes do you need to fill this box?



1. Answer the following questions:

a. Look at the first layer. How many cubes are in this layer? ____

b. How many cubes are in the:

2nd layer? ____ 3rd layer? ____ 4th layer? ____

2. What is the total number of cubes in the box?

a. Calculate it using addition.

b. Calculate it using multiplication.

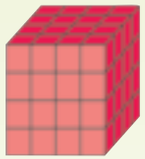
2. How many cubic units are there?

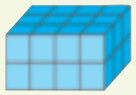
a.  ____ cubic units

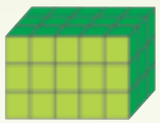
b.  ____ cubic units

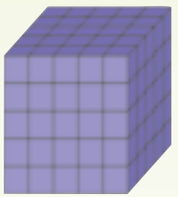
c.  ____ cubic units

d.  ____ cubic units

e.  ____ cubic units

f.  ____ cubic units

g.  ____ cubic units

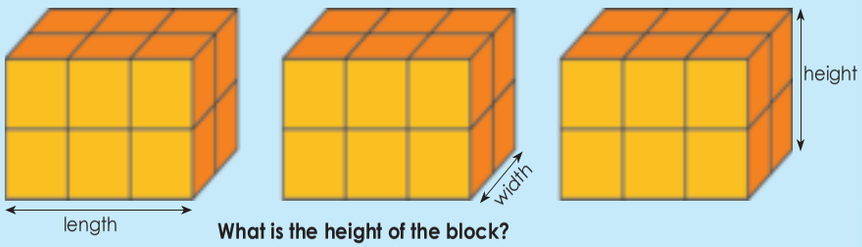
h.  ____ cubic units

In order

List the objects above in order, from the smallest to the biggest volume.

More volume

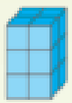
What is the length, width and height of this block?



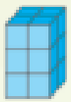
What is the height of the block?
What is the width of the block?
What is the length of the block?

1. Show the length, width and height of each block.

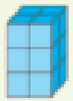
a.



What is the length of the block? ____



What is the width of the block? ____



What is the height of the block? ____

b.



What is the length of the block? ____

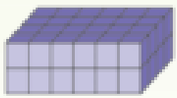


What is the width of the block? ____

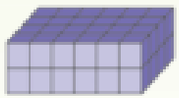


What is the height of the block? ____

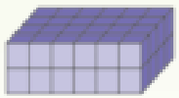
c.



What is the length of the block? ____

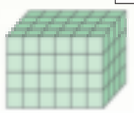


What is the width of the block? ____

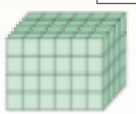


What is the height of the block? ____

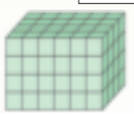
d.



What is the length of the block? ____



What is the width of the block? ____



What is the height of the block? ____

2. Without counting each cube. How many cubic units are there?

a.



Length = ____ cubic units
Width = ____ cubic units
Height = ____ cubic units

We can say: ____ x ____ x ____ = ____ cubic units

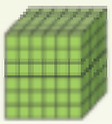
b.



Length = ____ cubic units
Width = ____ cubic units
Height = ____ cubic unit

We can say: ____ x ____ x ____ = ____ cubic units

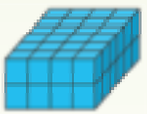
c.



Length = ____ cubic units
Width = ____ cubic units
Height = ____ cubic unit

We can say: ____ x ____ x ____ = ____ cubic units

d.



Length = ____ cubic units
Width = ____ cubic units
Height = ____ cubic unit

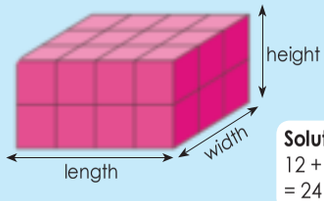
We can say: ____ x ____ x ____ = ____ cubic units

Cubic units

What will be the length, width and height of an object with 16 cubic units?

More and more volume

Talk about the 3 solutions



The length equals **4** units
The width equals **3** units
The height equals **2** units

Solution 1:
12 + 12
= 24 cubic units

Solution 2:
8 + 8 + 8
= 24 cubic units

Solution 3:
4 × 3 × 2
= 24 cubic units

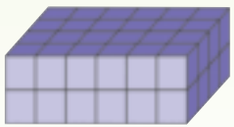
1. Give three ways to calculate the cubic units of the object

a. 

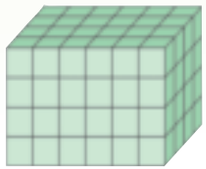
Solution 1: **Solution 2:** **Solution 3:**

b. 

Solution 1: **Solution 2:** **Solution 3:**

c. 

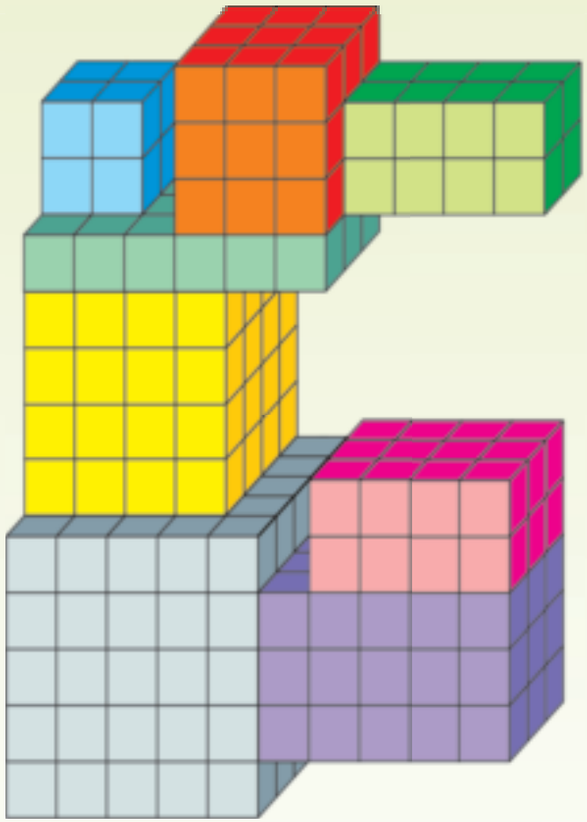
Solution 1: **Solution 2:** **Solution 3:**

d. 

Solution 1: **Solution 2:** **Solution 3:**

3. How many cubic units are in this model of a modern building? Use the table to help you.

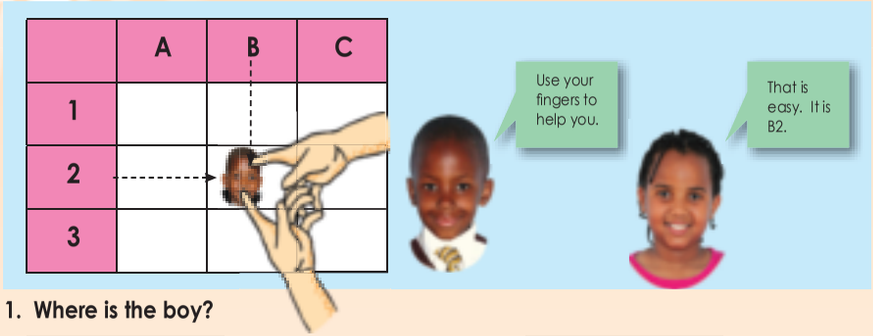
	Solution



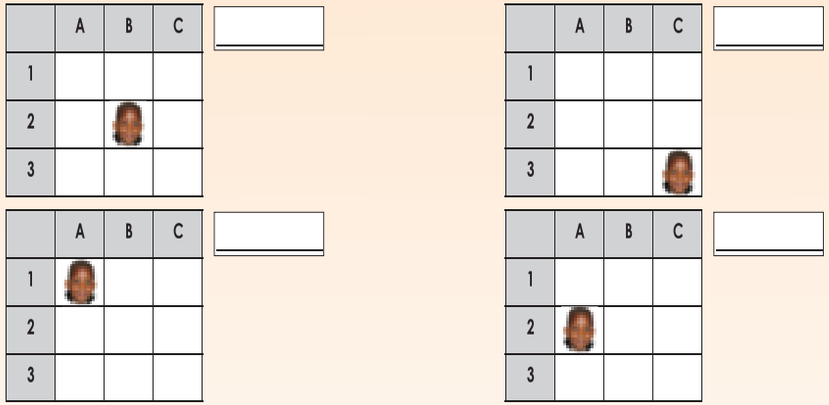
Model fun

Draw your own model of a modern building using cubic units.
It should have more than 100 cubic units. How many cubic units does your model have?

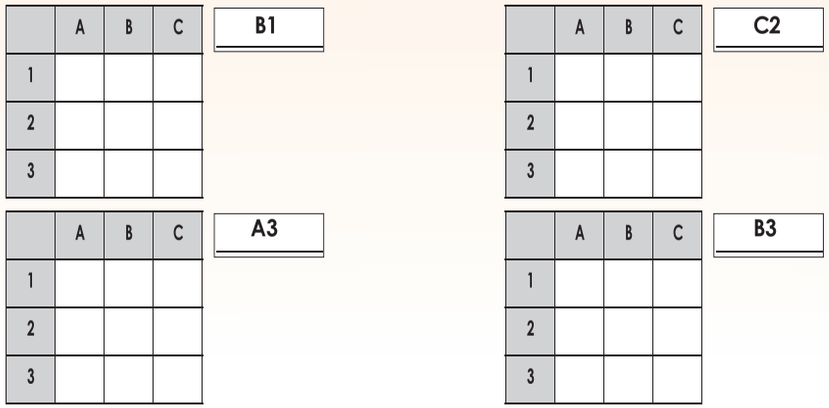
133 Map work



1. Where is the boy?



2. Draw a girl in:



3. Use the grid to answer the questions:

	A	B	C	D	E	F	G	H	I	J
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Where will you find a?

a. Green hexagon ____ b. Yellow square ____ c. Green square ____

d. Red square ____ e. Orange hexagon ____ f. Pink pentagon ____

g. Purple pentagon ____

4. Draw the following on the grid:

a. Blue triangle in B4
b. Yellow circle in E9
c. Red pentagon in C1
d. Green rectangle in F3
e. Purple hexagon in J10
f. Green triangle in H8
g. Blue hexagon in G10
h. Blue triangle in I 6
i. Brown square in E 5

Fun walk ...

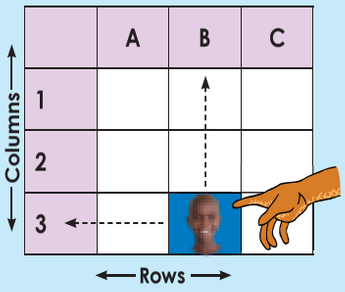
John	A	B	C
1	vest	cap	boots
2	shirt	pants	shirt
3	pants	shoes	cap

- John walks 3 steps across and 2 steps down? What items did John get?
- John walks 1 step across and 3 steps down. What items did John get?
- John walks 3 steps across and 1 step down. What items did John get?

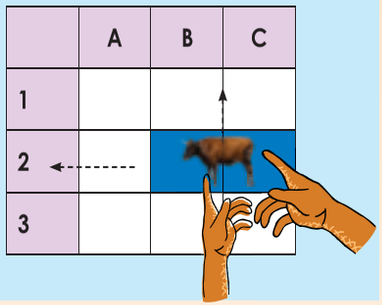
NB: Remember, when writing items you start by recording the item that is across before recording the items that go downwards.

Position and movement – more working with maps

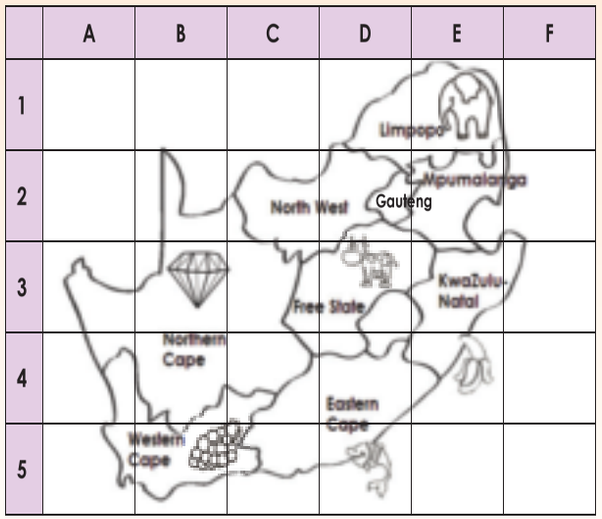
You can use your fingers to help you work out in which block an object can be located.



This example shows us that sometimes the object being located does not fit in only one block. This means that we need to identify all the blocks this object can be located in.



1. Use the map to answer the questions. Give the map reference and province.



a. Cow?	D3 Free State	d. Diamond?	
b. Grapes?		e. Elephant?	
c. Fish?		f. Banana?	

2. Where will you find :

a. North West?	b. Western Cape?	c. Eastern Cape?
d. Free State?	e. Gauteng?	f. Northern Cape?
g. KwaZulu-Natal?	h. Limpopo?	i. Mpumalanga?

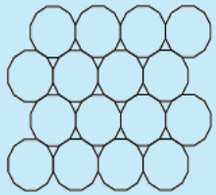
3. Colour Gauteng red in the map in Question 1.

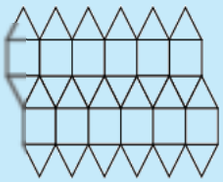
4. Draw your own map and write five questions that your friend can try to answer.

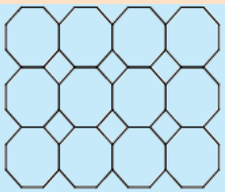
	A	B	C	D	E	F
1						
2						
3						
4						
5						

Tessellations

What do you notice about the shapes?
Are there spaces in-between?
Do the shapes overlap







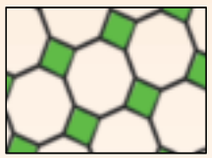
These are tessellations. What do you think 'tessellation' means?

A tessellation is a pattern made of one or more identical shapes. The shapes must:

- fit together without any gaps
- not overlap

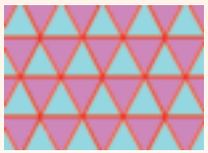
1. Answer the questions for each pattern.

i. What shapes have been used?
ii. Are these patterns tessellations? Why?



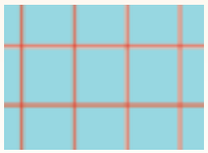
i.

ii.



i.

ii.



i.

ii.

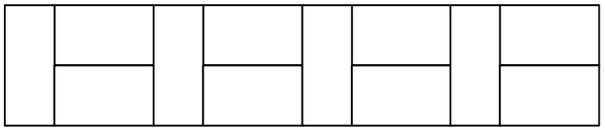


i.

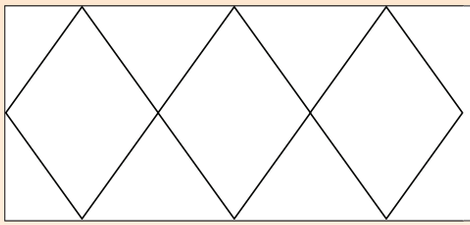
ii.

2. Complete the tessellation

a.

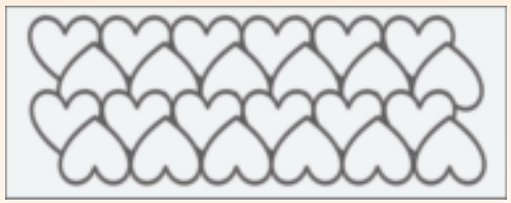


b.



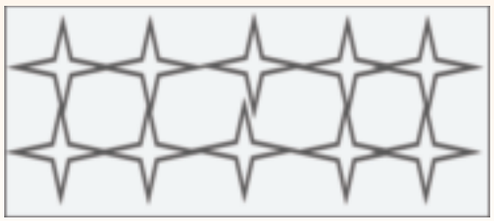
3. Answer the following questions for each pattern.

i. Are these patterns tessellations
ii. Give a reason for your answer.



i.

ii.



i.

ii.

Create your own tessellating patterns using:

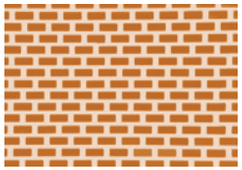
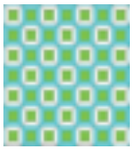
- Squares and rectangles
- Triangles of different sizes

Sign:

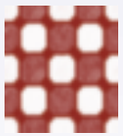
Date:

Describing patterns

These examples of patterns are made by using lines, 2-D shapes, 3-D objects and lines of symmetry. Only look at the pictures and then describe it. Do you get the same answer, as the answer below.

Pattern using straight lines  The pattern I see on the blades of the windmill is made of straight lines.	Pattern using 2-D shapes  The pattern I see on the wall looks like a tessellation pattern using 2-D shapes.
Pattern using 3-D objects  The pattern I see is made up of pencils laid together and it looks like a tessellation pattern of hexagons.	Pattern with symmetry  The pattern I see on the floor is like a tessellation pattern using 2-D shapes. This pattern is also symmetrical.

1. Use the words below to complete the description of the patterns.
symmetrical, 2-D shapes, tessellations, pattern, straight lines



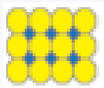
a. The pattern I see on the floor looks like a tessellation pattern using _____.



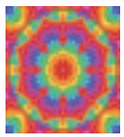
b. The pattern I see is made of _____.



c. The pattern I see on the artwork looks like a tessellations pattern using 2-D shapes. This pattern is also _____.



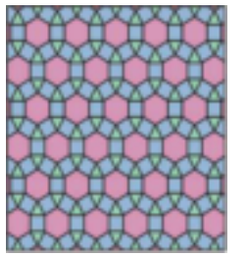
d. The pattern I see on the floor looks like a _____ pattern using 2-D shapes.



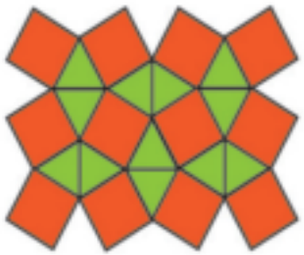
e. The _____ I see on the artwork looks like a tessellation pattern using 2-D shapes. This pattern is also symmetrical.

2. Describe the patterns below by choosing the correct answer.
Pattern with symmetry / pattern using 3-D objects / pattern using straight lines / pattern using 2-D shapes.

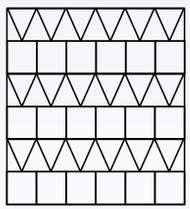
a. 

b. 

c. 

d. 

3. Describe the pattern.



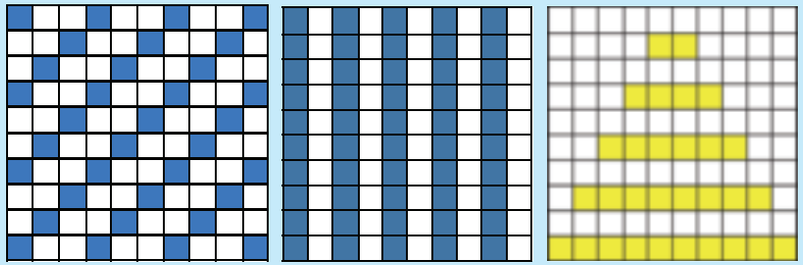
Let's tessellate

Tessellate a shape that you find in nature.

137 More on describing patterns

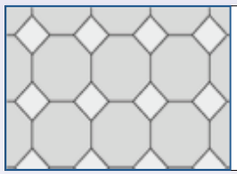
Look at the three different patterns.

- Are the colours being repeated?
- Is the square being repeated?
- Would you look at the rows or columns when you describe the pattern?



1. Complete the patterns and then describe each.

a.

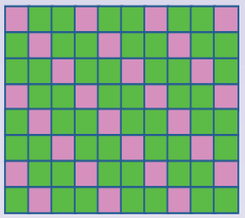


b.



2. Complete the sentences to describe the patterns.

a.

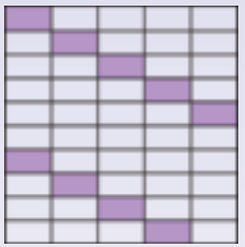


i. _____ squares have been slid along to make up the first row.

ii. The pattern starts with one _____ square and then two _____ squares.

iii. The pattern is repeated without _____.

b.



i. _____ _____ are slid along to make a row.

ii. The first row starts with _____ _____ rectangle.

iii. The next five rectangles will be _____.

iv. The pattern is _____ without gaps.

c.

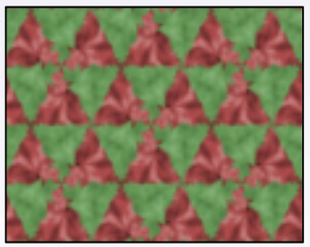


i. _____ _____ are slid along to make the first _____.

ii. All the hexagons are _____.

iii. The pattern is _____ without _____.

d.



i. _____ _____ _____ are slid across.

ii. The green triangles have been flipped and used to fill the _____ between the red triangles.

iii. The pattern is _____ without _____.

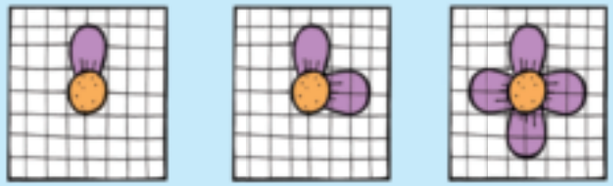
Quilt

Design your own patterned quilt. Describe it.



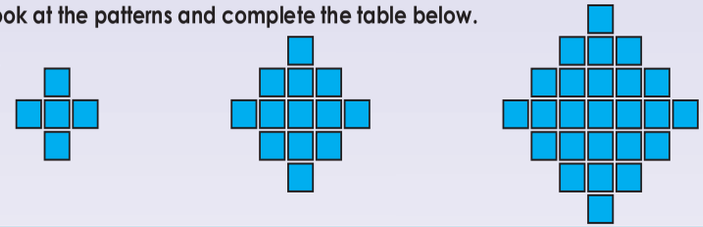
Geometric patterns

What happens to the petal?



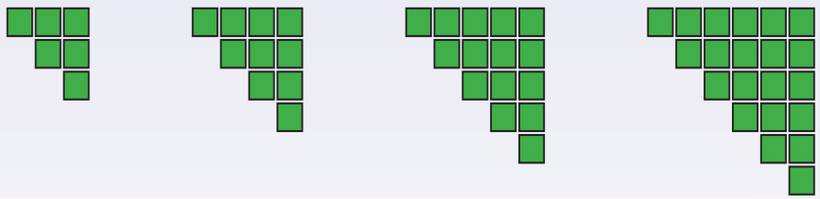
1. Look at the patterns and complete the table below.

a.



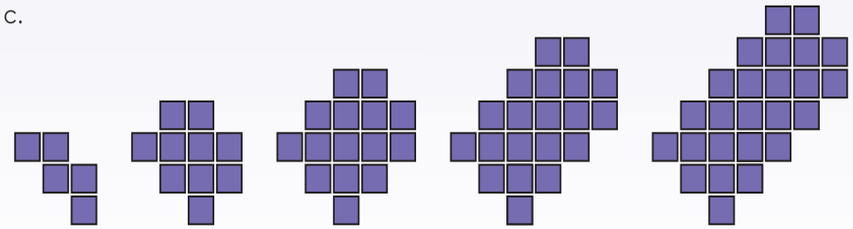
Pattern	1	2	3	4	5	6	7	8	9	10
Blocks										

b.



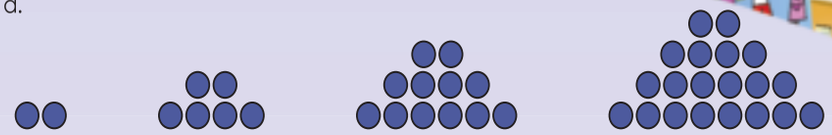
Pattern	1	2	3	4	5	6	7	8	9	10
Blocks										

c.



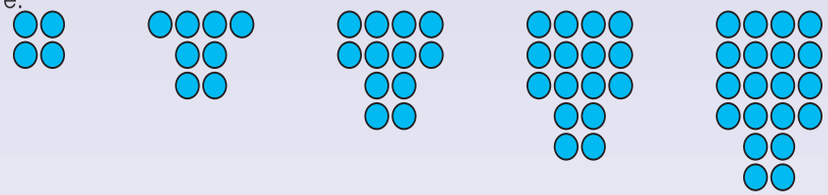
Pattern	1	2	3	4	5	6	7	8	9	10
Blocks										

d.



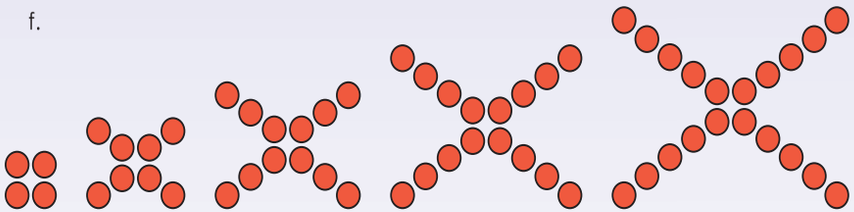
Pattern	1	2	3	4	5	6	7	8	9	10
Circles										

e.



Pattern	1	2	3	4	5	6	7	8	9	10
Circles										

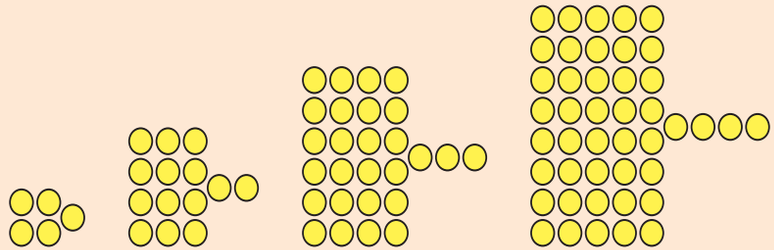
f.



Pattern	1	2	3	4	5	6	7	8	9	10
Circles										

Pattern fun

This is a pattern. Design your own pattern and give it to a friend to solve.



Sign:

Date:

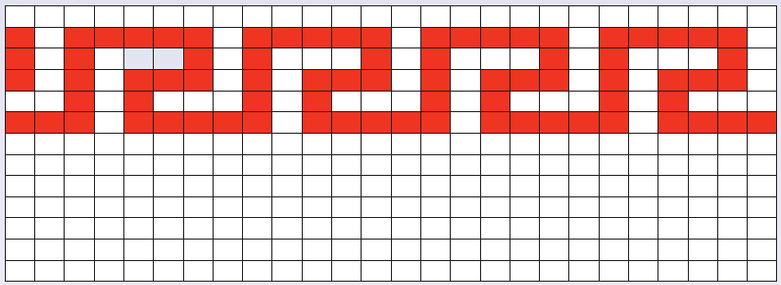
More geometric patterns

Explain what is happening with this pattern.

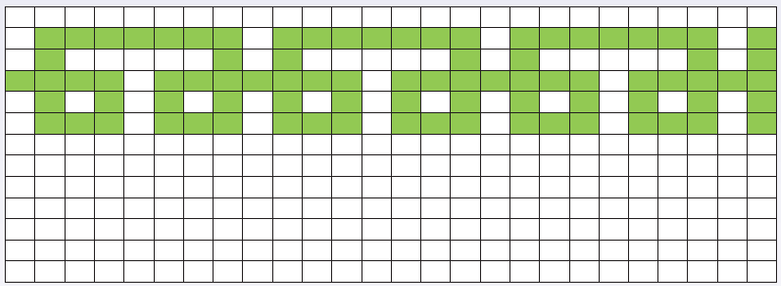


1. Copy the pattern:

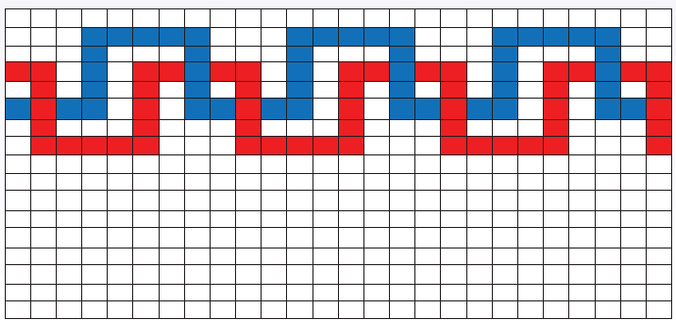
a.



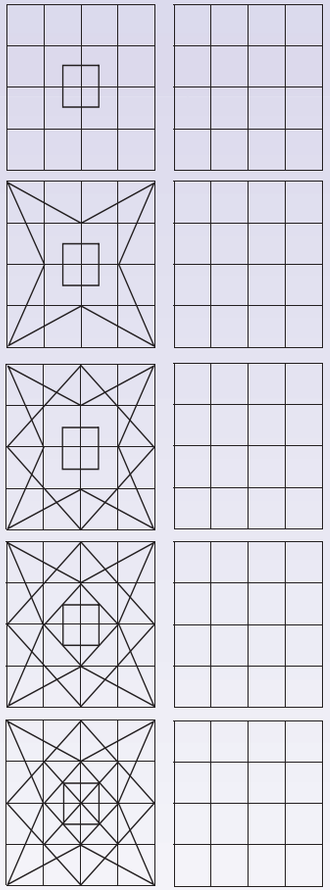
b.



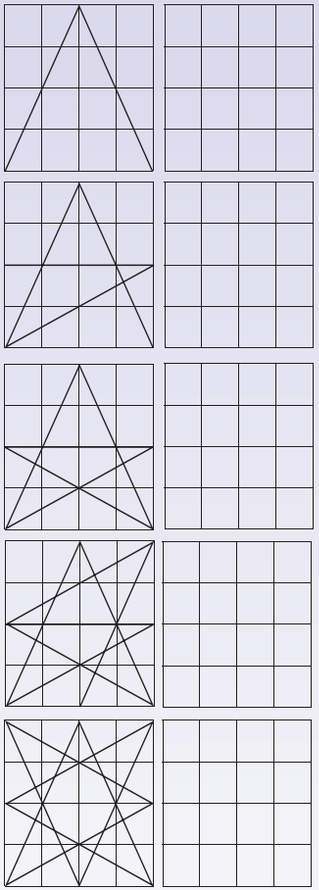
c.



2. Copy the patterns:

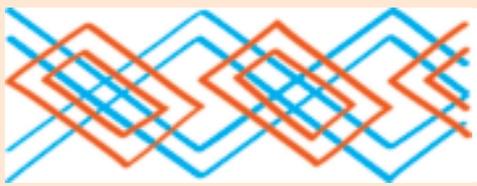


3. Copy the pattern.



Patterns

Copy and extend this pattern.



Sign:

Date:

140 Subtraction: breaking down all numbers according to place value

Explain how this number was broken up:

743 into 600 + 130 + 13

743
= 700 + 40 + 3

You can borrow 100 from 700 and get:
= 600 + 140 + 3

You can borrow 10 from 140 and get:
= 600 + 130 + 13

Explain: 743 = 500 + 240 + 3

1. Break up the number in four different ways. The example will guide you.

a. 9 451

Example 1: 9 000 + 400 + 50 + 1
Example 2: 8 000 + 1 400 + 50 + 1
Example 3: 9 000 + 300 + 150 + 1
Example 4: 9 000 + 400 + 40 + 11

b. 7 843

c. 8 986

d. 8 965

e. 9 572

f. 7 764

g. 7 897

h. 8 547

i. 9 698

2. Calculate the following using the example to guide you. You might need some extra paper.

Example:

Calculate : 9 652 – 4 375

9 652 – 4 375 = (9 000 + 600 + 50 + 2) – 4 000 – 300 – 70 – 5
= (9 000 + 500 + 140 + 12) – 4 000 – 300 – 70 – 5
= (9 000 – 4 000) + (500 – 300) + (140 – 70) + (12 – 5)
= 5 000 + 200 + 70 + 7
= 5 277

a. 7 965 – 4 487 =

b. 8 157 – 3 079 =

c. 9 635 – 3 257 =

3. Solve the following. My mother had R8 000 and spent R4 578 on new furniture. What was her change?

Problem solving

- My mother bought 3 550 mm of ribbon. She used 2 975 mm. How much ribbon is left?
- There was 1 650 ml juice in the bottle. My brother drank 350 ml. How much juice is left in the bottle?
- My dog weighs 4 550 g. My sister's dog weighs 3 785 g. What is the difference in their weight?

Sign:
Date:

141 Addition and Subtraction of 4-digit numbers: breaking down numbers

Add the following:

5 649 + 3 000 =	
8 617 + 200 =	
8 536 + 50 =	
8 728 + 1 =	

What do you notice?

Subtract the following:

5 649 – 2 000 =	
3 617 – 300 =	
3 536 – 10 =	
3 728 – 5 =	

What do you notice?

1. Calculate the following.

Example: 8 753 + 1 000 = 9 753

a. 9 534 + 200 = ____ b. 6 543 + 20 = ____

c. 2 014 + 2 = ____ d. 8 591 + 4 000 = ____

e. 4 512 + 2 000 = ____ f. 1 853 + 400 = ____

2. Calculate the following.

Example: 8 753 – 1 000 = 7 753

a. 7 169 – 100 = ____ b. 4 976 – 50 = ____

c. 3 135 – 1 000 = ____ d. 2 579 – 4 = ____

e. 6 825 – 10 = ____ f. 8 889 – 30 = ____

3. Complete the table. Always start with the given number.

	Add 1 000	Subtract 1 000	Add 100	Subtract 100	Add 10	Subtract 10	Add 1	Subtract 1
6 459								
4 572								
7 197								
5 475								
3 216								

4. Add the following by breaking down the number to be added.

Example: Calculate 4 658 + 3 271
4 658 + 3 000 → 7 658 + 200 → 7 858 + 70 → 7 928 + 1 → 7 929

a. 5 793 + 3 554 = ____

b. 6 982 + 2 075 = ____

c. 6 898 + 2 181 = ____

5. Subtract the following by breaking down the number to be subtracted.

Example: Calculate 6 478 – 3 235
6 478 – 3 000 → 3 478 – 200 → 3 278 – 30 → 3 248 – 5 → 3 243

a. 3 275 – 1 438 = ____

b. 8 159 – 3 754 = ____

c. 5 315 – 2 946 = ____

d. 4 952 – 3 966 = ____

Solving problems by calculating

Solve the problems by identifying the questions, the numbers and the operation (addition or subtraction), make a drawing if necessary and write down a number sentence. Solve the problem.

- What is the sum of R2 999 and R3 534?
- What is the difference between 4 738 m and 8 735 m?
- What is the sum of 4 983 g and 3 982 g?
- What is the sum of 4 983 km and 4 894 km?

Buying and Selling





1. Tick to show if the balls were sold.

	Sold
R35,99	
R18,99	
R24,99	
R9,99	
R34,99	
R49,99	
R12,99	
R99,99	
R64,99	
R55,99	

a. What would I have got if I sold all the balls?
Show your calculations here.

b. What did I actually get for selling the balls.
Show your calculations here.

2. Colour in the money you get in blue, and the money you spend in orange.

Pocket money R150	Burger R25	Tuck shop R15	Cool drink R8	Extra chores R50	Book R50
Stationary R22	Airtime R12	Jewellery R18	Birthday money R100	CD special R50	Ice skating R25
Extra Chores R30	Movies R25	Pocket money R150	Jeans R99	Sweet R6	Extra chores R40
Magazine R50	Tuck shop R12	Sweets R15	Airtime R15	Extra chores R30	Birthday card R10

3. Complete this table using the information above.

Money I get	Money I spend

a. Did I stay within my budget?

Explain:



Budget your winnings

If you win a R1 000 prize what will you do with the money?

Probability

Talk about these pictures.

Unlikely to happen.



Likely to happen.



1. Answer: Likely or unlikely to happen.

I am going to eat supper. _____

A three-months-old baby is going to walk. _____

It is going to snow tomorrow. _____

I will walk to school tomorrow. _____

I will not go to school tomorrow. _____

My mom is going to work tomorrow. _____

My teacher is not coming to school tomorrow. _____

The sun will shine tomorrow. _____

It is going to rain this afternoon. _____

I am going to ride a bicycle this afternoon. _____

2. Draw a picture.

Something that will likely happen with you today.	Something that will not likely happen with you today.

3. Use the words and write sentences on:

play with friends | do my homework | play with my dog | play with a cat | eat lunch | going on holiday | eat breakfast | see my grandma

Something that will likely happen with you today.

Something that will not likely happen with you today.

Ask your family

Ask your family to help you to complete the diagram below.

Likely to happen — Unlikely to happen

More on probability

What is in the bag? What would you like to pull out of the bag.



1. Take a non-transparent bag. Make two cards that are similar to the ones below, and place them in the bag.



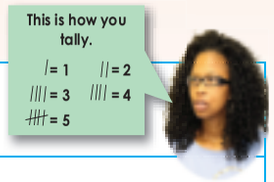


Take a card from the bag without looking. Check which card you have drawn. Put it back in the bag. Draw a card again. Is it the same or a different card?

b. Did your friend draw the same cards?

c. Did the people in your group all draw the same cards?

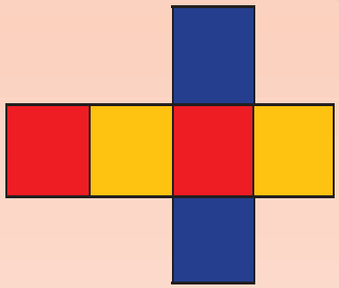
Now do this activity 50 times. (Draw a card, record your results using tallies and place the card back into the bag).
Write your results in the table below.



Compare your results with your friend's results.

2. Make your own dice with the following colours and then answer the questions.



a. What colour do you like the most on the dice?

b. What colour do you like the least on the die?

Ask your friend the same questions. What did she or he answer?

d. Roll the dice. On what colour did it land?

e. Ask your friend to roll the dice. On what colour did it land?

f. Did you land on the same colour?

g. Did the other children in your class land on the same colour?

3. Roll the dice 50 times and record your results in the table below using tallies.

Red	
Blue	
Yellow	

