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.



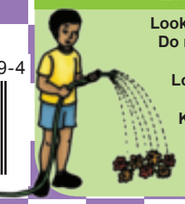
Religion, belief and opinion

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 5 – BOOK 2
TERMS 3 & 4
ISBN 978-1-4315-0169-4
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MATHEMATICS IN ENGLISH – Grade 5 Book 2

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Revised and CAPS aligned



Grade 5

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. and Aitchison,J.J.W.

Rainbow WORKBOOKS

Grade 5

Mathematics

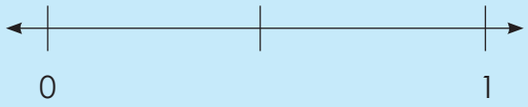
PART 3

WORKSHEETS
65 to 144

ENGLISH Book 2

Name:

65 Describing and ordering fractions



- **How many numbers are marked between the given numbers?**
- **How far is the unnumbered mark from the next number?**

What do the fraction strips tell you?



1. Use these number lines to answer the questions:

a.



i. What do the interval marks between 0 and 1 show us? _____

ii. How did you work it out? _____

_____

iii. What will the interval be between 0 and the next mark after 1?

_____

b.



i. What do the interval marks between 1 and 2 show us? _____

ii. How did you work it out? _____

_____

iii. What will the interval be between 1 and the next mark after 2?

_____

c.



i. What do the intervals between 3 and 4 tell us? _____

ii. How did you work it out? _____

_____

iii. What will the interval be between 3 and the second mark after 4? _____

_____

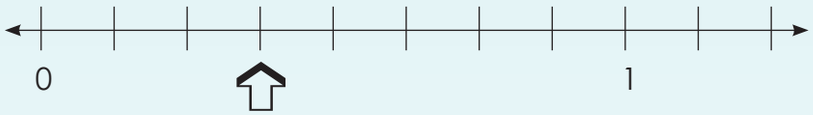
Term 3

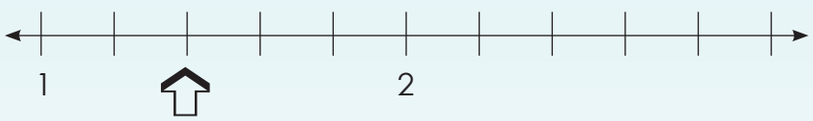
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

2. What fraction of the pictures below have been coloured?

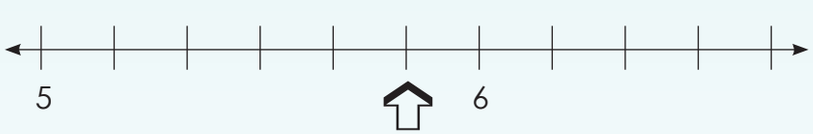
a.  b.  c.  d. 

3. What fraction does the arrow show?

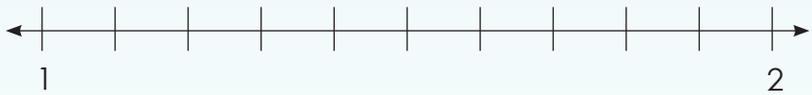
a. 

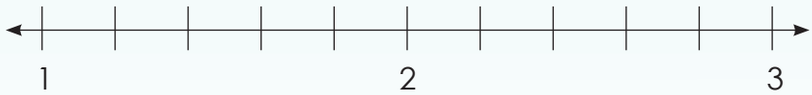
b. 

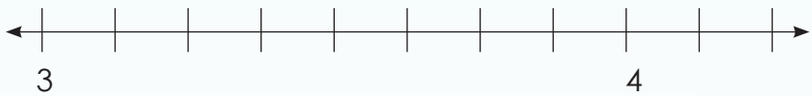
c. 

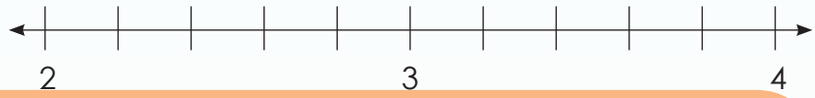
d. 

4. Show the following on the number lines.

a. One and a half 

b. Two and one quarter 

c. Three and one eighth 

d. Two and one fifth 

Sharing sweets

If 5 children share 35 sweets, how many sweets will each child get? What fraction of the sweets will each child get?

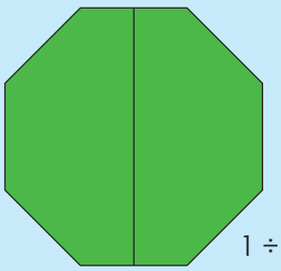
Sign:

Date:

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

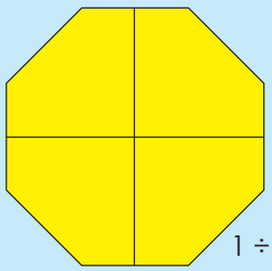
66 Equivalent fractions

Look at the fractions and the sums. Talk about it.



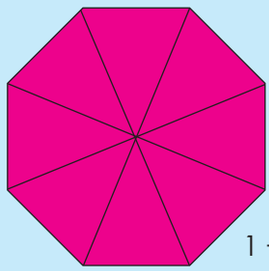
$1 \div 2 = \frac{1}{2}$

Halves



$1 \div 4 = \frac{1}{4}$

Quarters



$1 \div 8 = \frac{1}{8}$

Eighths

1. Using the above diagrams, write an equivalent fraction for:

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

b. $\frac{3}{4} = \square$

c. $\frac{4}{8} = \square$

d. $\frac{2}{4} = \square$

e. $\frac{2}{2} = \square$

f. $\frac{6}{8} = \square$

2. Fill in <, > or =.

a. $\frac{1}{2} \boxed{>} \frac{1}{4}$

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. $\frac{2}{4} \square \frac{1}{8}$

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

g. $\frac{2}{4} \square \frac{6}{8}$

h. $\frac{1}{4} \square \frac{4}{8}$

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

j. $\frac{1}{2} \square \frac{3}{4}$

k. $\frac{1}{2} \square \frac{1}{8}$

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

m. $\frac{1}{2} \square \frac{8}{8}$

n. $\frac{4}{4} \square \frac{7}{8}$

o. $\frac{1}{2} \square \frac{7}{8}$

3. Complete the following:

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

b. One whole = $\frac{2}{4}$ + ☐

c. One whole = $\frac{4}{8}$ + ☐

d. One whole = $\frac{3}{4}$ + ☐

e. One whole = $\frac{3}{8}$ + ☐

f. One whole = $\frac{2}{8}$ + ☐

4. Draw a picture for the following:

a. Jabu had two quarters of a slab of chocolate, and William had five eighths of another slab. Who ate the most chocolate?	b. Ben had $\frac{1}{4}$ of a cool drink, and then another $\frac{1}{4}$. Sam had $\frac{1}{4}$ of the same type of cool drink. What do you notice?

Fractions everywhere you look

Divide any object into eighths. → Show one quarter of the object. → Show one half of the object.

Sign:

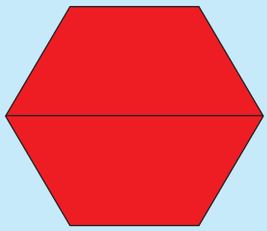
Date:

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

67 More equivalent fractions

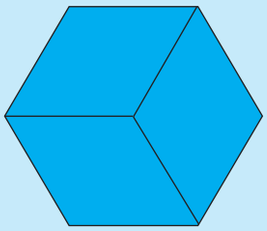
Look at the fractions and the sums. Talk about it.

$1 \div 2 = \frac{1}{2}$



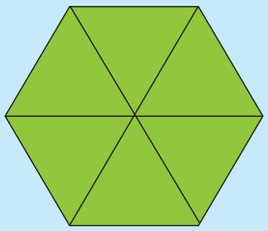
Halves

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



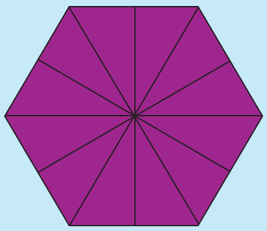
Thirds

$1 \div 6 = \frac{1}{6}$



Sixths

$1 \div 12 = \frac{1}{12}$



Twelfths

1. Using the above diagrams, write an equivalent fraction for:

a. $\frac{1}{2} = \boxed{\frac{3}{6}}$

b. $\frac{1}{3} = \square$

c. $\frac{1}{6} = \square$

d. $\frac{2}{3} = \square$

e. $\frac{3}{6} = \square$

f. $\frac{10}{12} = \square$

g. $\frac{4}{6} = \square$

h. $\frac{12}{12} = \square$

i. $\frac{6}{12} = \square$

2. Fill in < or >.

a. $\frac{6}{12} \boxed{<} \frac{2}{3}$

b. $\frac{1}{2} \square \frac{2}{6}$

c. $\frac{9}{12} \square \frac{1}{2}$

d. $\frac{1}{2} \square \frac{4}{6}$

e. $\frac{2}{6} \square \frac{3}{12}$

f. $\frac{7}{12} \square \frac{2}{3}$

g. $\frac{11}{12} \square \frac{6}{6}$

h. $\frac{1}{12} \square \frac{4}{6}$

i. $\frac{2}{3} \square \frac{1}{2}$

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

k. $\frac{11}{12} \square \frac{2}{3}$

l. $\frac{10}{12} \square \frac{2}{3}$

m. $\frac{1}{2} \square \frac{1}{3}$

n. $\frac{10}{12} \square \frac{1}{6}$

o. $\frac{1}{3} \square \frac{5}{12}$

3. Complete the following:

a. One whole = $\frac{1}{2}$ + ☐

b. One whole = $\frac{3}{6}$ + ☐

c. One whole = $\frac{6}{12}$ + ☐

d. One whole = $\frac{1}{3}$ + ☐

e. One whole = $\frac{5}{6}$ + ☐

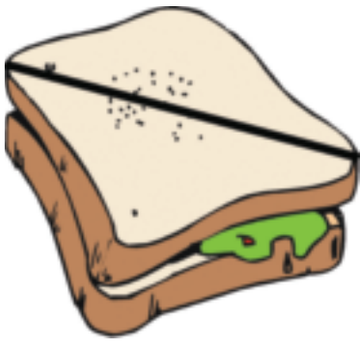
f. One whole = $\frac{5}{12}$ + ☐

4. Write a word problem for each.

a.



b.



c.



d.



Fraction problems

Suraya made 12 samoosas.

Two-sixths of the samoosas were chicken.

How many chicken samoosas did Suraya make?

Make a drawing to help you to solve this.



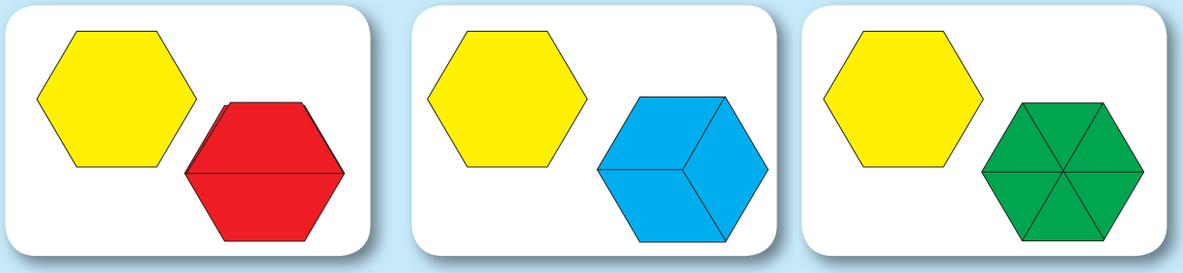
Sign:

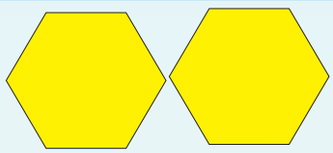
Date:

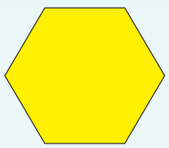
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

68 Even more equivalent fractions

Talk about these yellow whole hexagons and the fractions.



1. Answer the following questions. Use two  **= 1 whole**

a. The yellow hexagon  is which part of the whole? _____

b. The red trapezium  is which part of the whole? _____

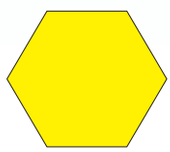
c. The blue rhombus  is which part of the whole? _____

d. The green triangle  is which part of the whole? _____

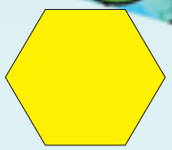
2. Do these.

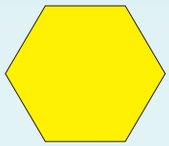
a. How many green triangles  are in one blue rhombus  ? _____

b. How many green triangles  are in one red trapezium  ? _____

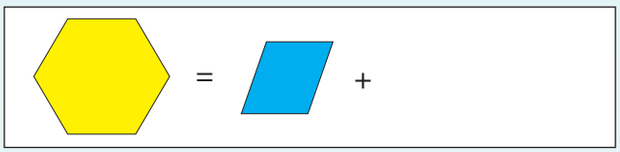
c. How many green triangles  are in one yellow hexagon  ? _____

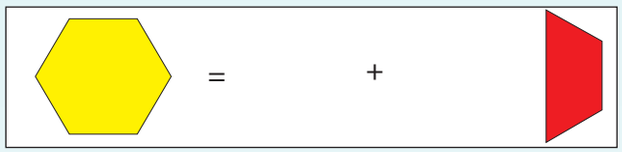


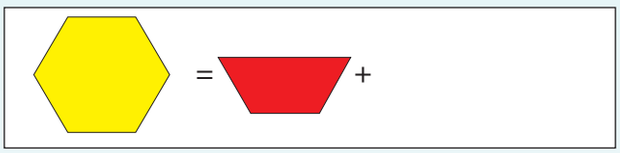
d. How many blue rhombuses  are in one yellow hexagon  ?

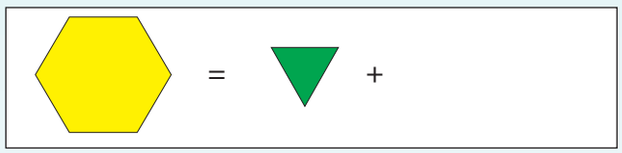
e. How many red trapezium  are in one yellow hexagon  ?

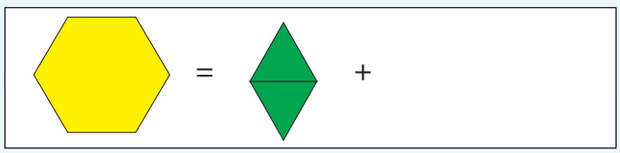
3. Complete the following by drawing shapes.

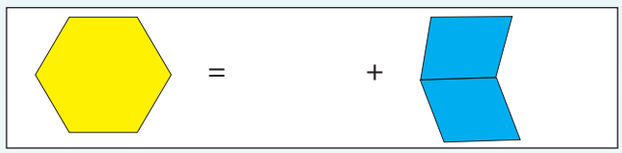


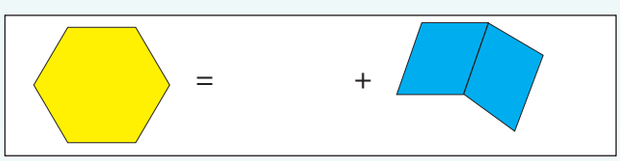


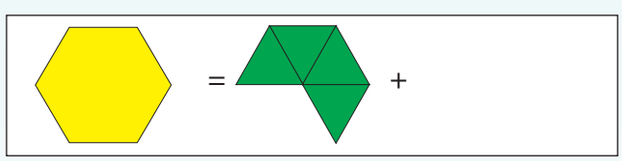


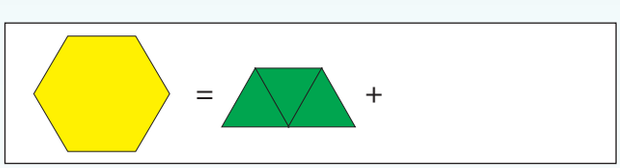


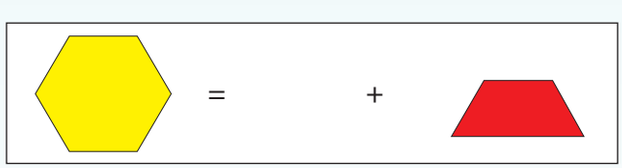




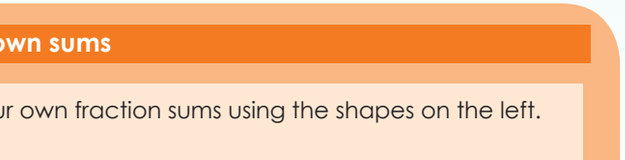






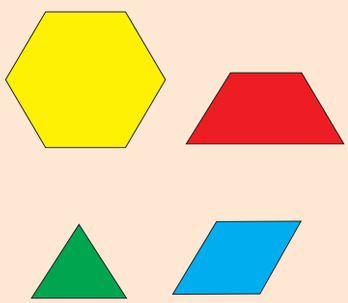






Make my own sums

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



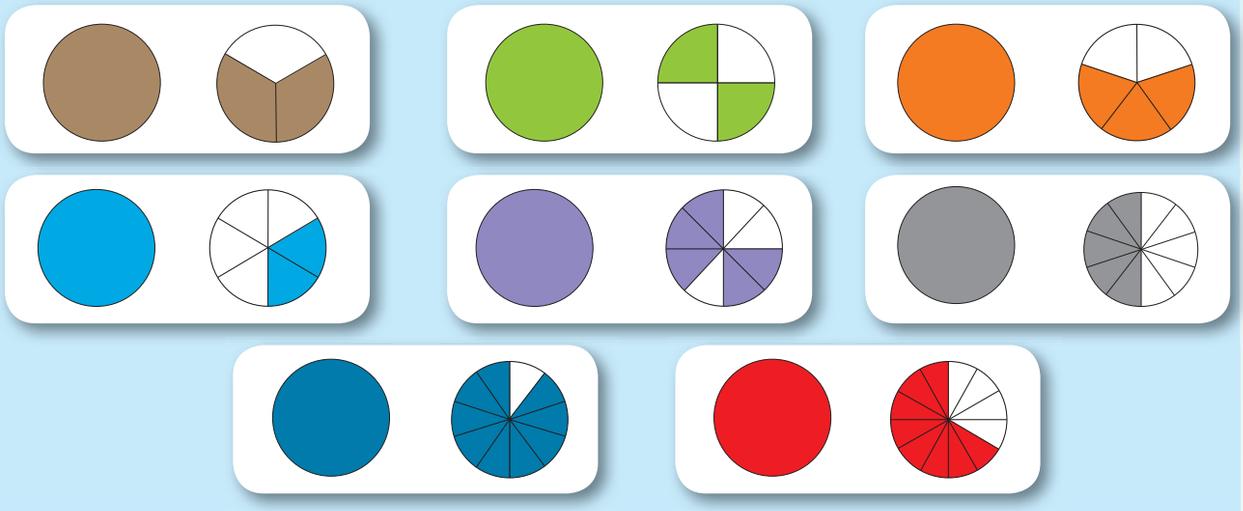
Sign:

Date:

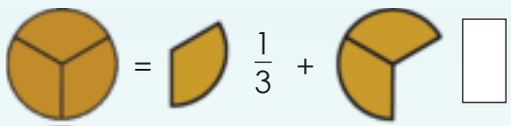
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

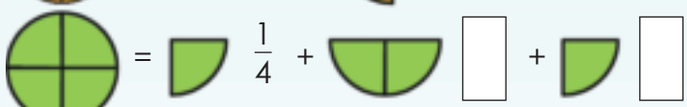
69 Addition and subtraction of fractions

Look at the diagram. Make addition sums using the colour fraction circles?



1. Do these calculations. Use the diagram to help you.

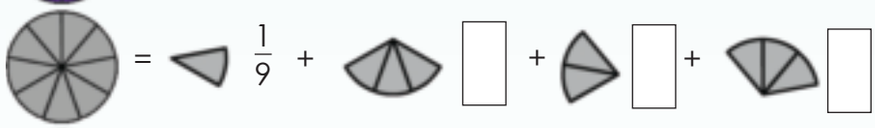
a.  $= \frac{1}{3} +$ ☐

b.  $= \frac{1}{4} +$ ☐ + ☐

c.  $= \frac{1}{5} +$ ☐ + ☐ + ☐

d.  $= \frac{1}{6} +$ ☐ + ☐

e.  $= \frac{1}{8} +$ ☐ + ☐ + ☐

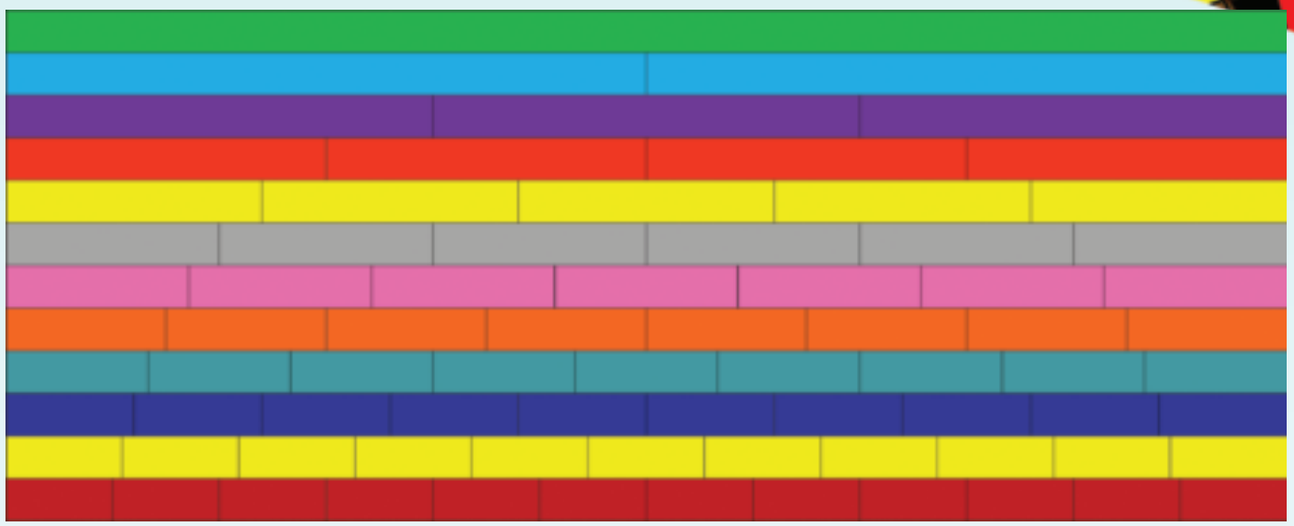
f.  $= \frac{1}{9} +$ ☐ + ☐ + ☐

g.  $= \frac{1}{10} +$ ☐ + ☐ + ☐

h.  $= \frac{1}{12} +$ ☐ + ☐ + ☐ + ☐



2. Use the diagram to complete the sums.



a. $\frac{1}{4} + \frac{2}{4} = \boxed{\frac{3}{4}}$

b. $\frac{6}{10} + \frac{2}{10} = \square$

c. $\frac{7}{8} - \frac{3}{8} = \square$

d. $\frac{9}{12} - \frac{7}{12} = \square$

e. $\frac{4}{7} - \frac{3}{7} = \square$

f. $\frac{5}{11} + \frac{4}{11} = \square$

g. $\frac{8}{10} - \frac{6}{10} = \square$

h. $\frac{3}{6} + \frac{1}{6} = \square$

i. $\frac{1}{3} + \frac{1}{3} = \square$

j. $\frac{3}{12} + \frac{8}{12} = \square$

k. $\frac{11}{12} - \frac{8}{12} = \square$

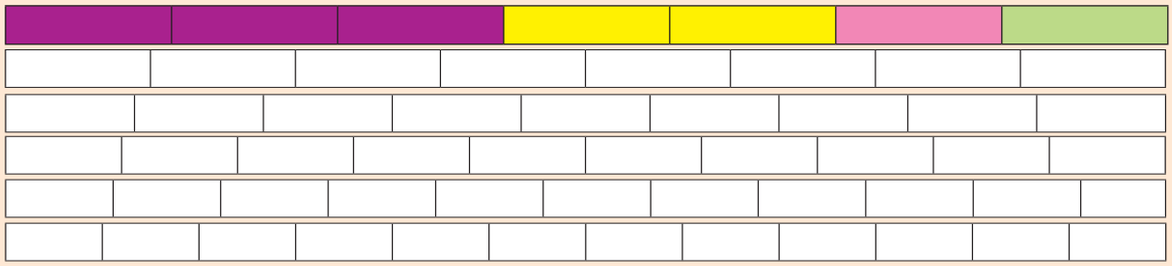
l. $\frac{6}{11} + \frac{3}{11} = \square$

3. At the party I ate $\frac{2}{12}$ of a pizza, my friend had $\frac{1}{12}$ and my big brother had $\frac{4}{12}$ of the same pizza. How much pizza did we eat altogether? Show your answer. Show your answer on a separate piece of paper.



Fraction sums

Colour each fraction strip in different colours. Ask a friend to write down the fractions each colour represents in the fraction strip. We coloured the first one for you.



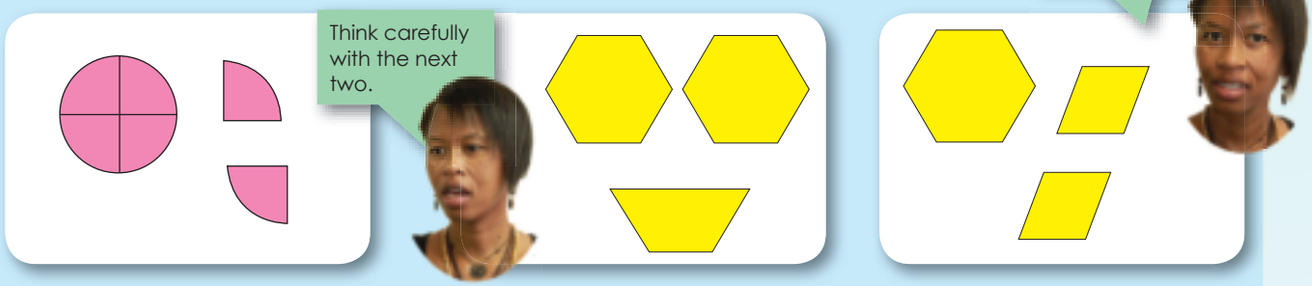
Sign:

Date:

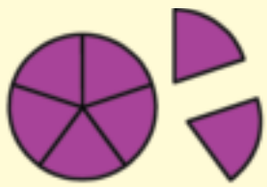
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

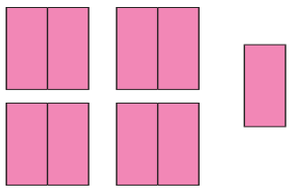
70 Addition of mixed numbers

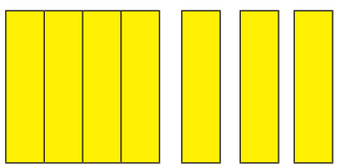
What is each picture telling you?



1. Write it as a mixed number:

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

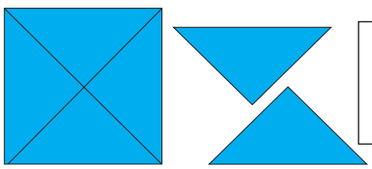
b.  ____

c.  ____

d.  ____

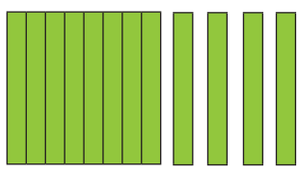
e.  ____

f.  ____

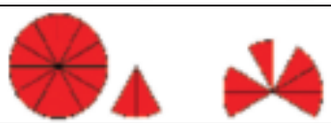
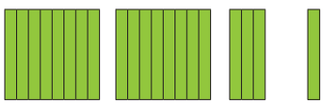
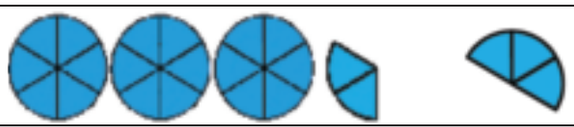
g.  ____

h.  ____

i.  ____

j.  ____

2. Calculate the following:

a. 	$1\frac{3}{5} + \frac{1}{5} = 1\frac{4}{5}$
b. 	$1\frac{5}{8} + \frac{2}{8} =$
c. 	$1\frac{3}{6} + \frac{1}{6} =$
d. 	$1\frac{2}{4} + \frac{1}{4} =$
e. 	$1\frac{3}{9} + \frac{4}{9} =$
f. 	$1\frac{2}{12} + \frac{6}{12} =$
g. 	$1\frac{2}{12} + \frac{4}{12} =$
h. 	$2\frac{3}{8} + \frac{1}{8} =$
i. 	$3\frac{2}{6} + \frac{3}{6} =$
j. 	$3\frac{2}{8} + \frac{4}{8} =$

What does this mean?

Make a drawing to show this.

$1\frac{1}{2}$ glasses of water

$3\frac{1}{2}$ plates of food

$1\frac{3}{4}$ cakes

Sign:

Date:

71 Addition and subtraction of mixed numbers

Look at the sum and the diagrams. Explain this in your own words.

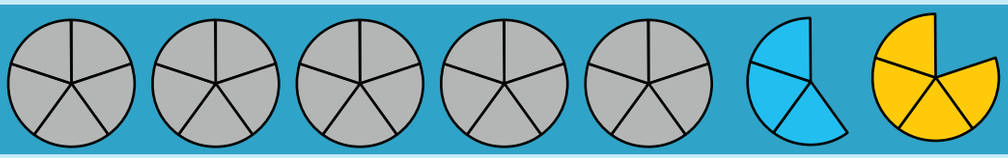
Step 1

$2\frac{3}{5} + 3\frac{4}{5}$



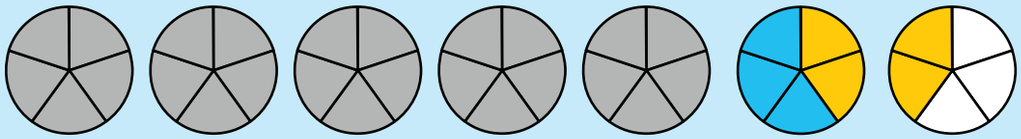
Step 2

$= 5\frac{7}{5}$



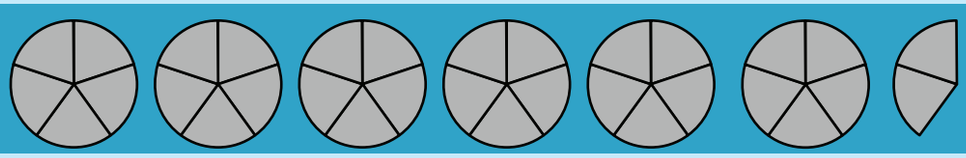
Step 3

$5 + \frac{5}{5} + \frac{2}{5}$



Step 4

$= 6\frac{2}{5}$



1. Complete the following addition sums.

a. $\frac{3}{4} + \frac{1}{4} =$

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

c. $\frac{4}{7} + \frac{1}{7} =$

d. $2\frac{3}{8} + \frac{3}{8} =$

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

f. $4\frac{1}{8} + \frac{4}{8} =$

2. Complete the following subtraction sums.

a. $\frac{3}{4} - \frac{1}{4} =$

b. $\frac{2}{5} - \frac{1}{5} =$

c. $\frac{4}{7} - \frac{1}{7} =$

d. $2\frac{3}{8} - \frac{3}{8}$

e. $1\frac{2}{4} - \frac{1}{4}$

f. $3\frac{7}{8} - \frac{4}{8}$

3. Complete the following sums and remember to show your calculations.

a. $1\frac{3}{4} + \frac{1}{4} =$

b. $3\frac{2}{5} + \frac{1}{5} =$

c. $5\frac{4}{7} + \frac{1}{7} =$

d. $2\frac{3}{8} + 4\frac{3}{8} =$

e. $2\frac{2}{4} - 1\frac{1}{4} =$

f. $4\frac{1}{8} + 4\frac{4}{8}$

g. $7\frac{3}{8} - 2\frac{3}{8} =$

h. $9\frac{2}{4} + 1\frac{1}{4} =$

i. $3\frac{1}{8} - 3\frac{4}{8}$

4. Complete the following story sums.

a. Father brings home $5\frac{3}{8}$ chocolate from work. If Mother eats $2\frac{1}{8}$, how much is left for me?

b. John buys 3 cakes. He and his friends eat $2\frac{1}{8}$. How much is left over?

c. Sipho has 6 oranges. His family eats $2\frac{1}{6}$. How much is left over?

a.

b.

c.

Reading fractions

Bongi enjoys reading. She has read $\frac{3}{4}$ of a 120-page book. How many pages of the book does she still have to read?

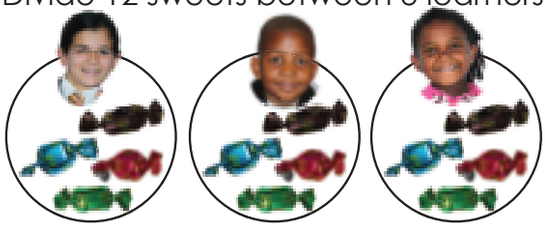
Sign:

Date:

72 Fractions of whole numbers

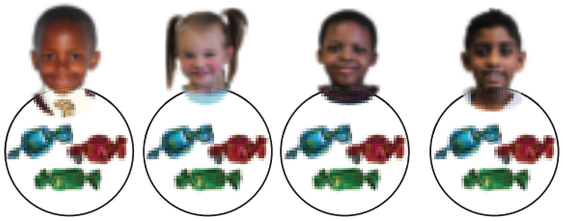
Discuss the following:

Divide 12 sweets between 3 learners.



- What fraction did each one get? $\frac{1}{3}$
- How many sweets did each learner get?

Divide 12 sweets between 4 learners.



- What fraction did each one get? $\frac{1}{4}$
- How many sweets did each learner get?

1. Write a fraction number sentence for each.

Example 1:

- If we divide 12 **sweets** between 3 learners, each one gets 4 sweets.
- This means that each learner gets $\frac{1}{3}$.
- $\frac{1}{3}$ of 12 sweets equals 4.
- We write it as a number sentence: $\frac{1}{3}$ of 12 = 4

Example 2:

- If we divide 12 **sweets** between 4 learners, each one gets 3 sweets.
- This means that each learner gets $\frac{1}{4}$.
- $\frac{1}{4}$ of 12 sweets equals 3.
- We write it as a number sentence: $\frac{1}{4}$ of 12 = 3

a. If we divide 24 marbles between 3 children, each one will get 8 marbles.

b. If we divide 45 cards between 5 children, each one will get 9 cards.

c. If we divide 35 counters between 7 children, each one will get 5 counters.

d. If we divide 32 sweets between 4 children, each one will get 8 sweets.

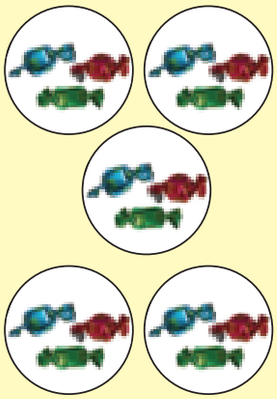
e. If we divide 63 blocks between 7 children, each one will get 9 blocks.

f. If we divide 72 coins between 6 children, each one will get 12 coins.

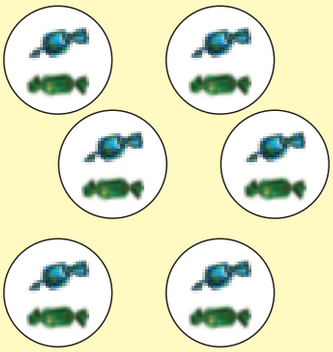
2. Solve the following. Show a drawing for each.

Example 1:

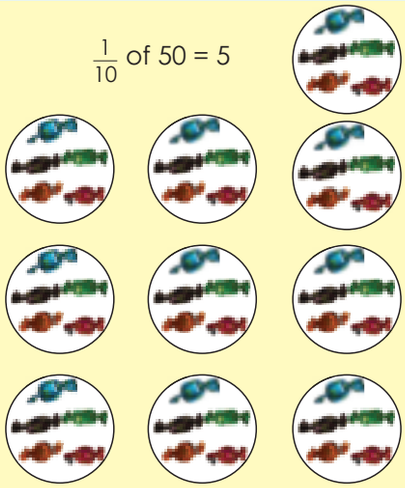
$\frac{1}{5}$ of 15 = 3



$\frac{1}{6}$ of 12 = 2



$\frac{1}{10}$ of 50 = 5



a. $\frac{1}{3}$ of 24 = ____

b. $\frac{1}{11}$ of 44 = ____

c. $\frac{1}{7}$ of 63 = ____

d. $\frac{1}{4}$ of 40 = ____

e. $\frac{1}{7}$ of 77 = ____

f. $\frac{1}{4}$ of 48 = ____

g. $\frac{1}{10}$ of 100 = ____

h. $\frac{1}{6}$ of 24 = ____

i. $\frac{1}{9}$ of 54 = ____

Sweet fractions

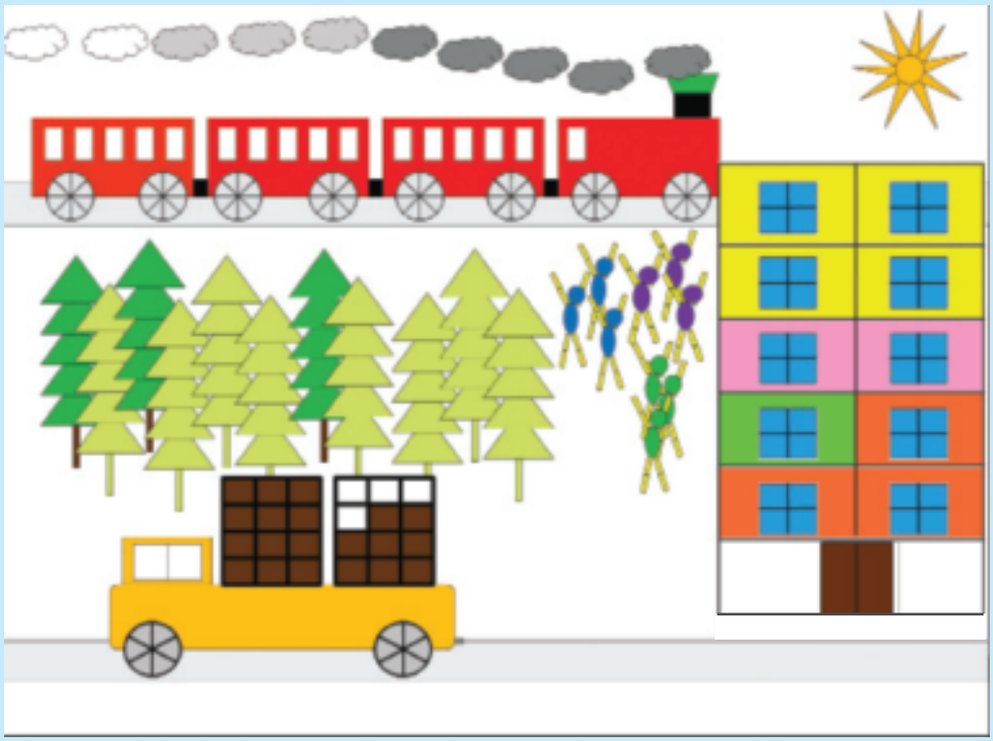
My mother buys a big bag of Fizzers with 144 sweets inside. My brother and 11 friends share the bag between them. How many will each child receive? What fraction of the fizzers will each child get?

Sign:

Date:

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

73 Fraction problems



1. Use the picture above to answer the questions.

a. What fraction of the trees are light green? _____

b. What fraction of the trees are dark green? _____

c. Write a fraction sum for the trees _____

d. The forestry department planted one more dark green tree. What fraction of the trees are now dark green? _____ light green? _____

e. Two light green trees died. What fraction of the trees are now dark green? _____ light green? _____

2. Use the picture above to answer the questions.

a. How many big containers are on the truck? _____

b. Each container is filled with small boxes.
How many small boxes are in the first container? _____.
How many small boxes are in the second container? _____
Write it as a fraction of the second container. _____

c. Another 6 small boxes are to be loaded onto the truck.
Write it as a fraction of all the small boxes now on the truck. _____

3. Some people do their early morning aerobics outside.

a. How many people are doing physical exercises outside? _____

b. What fraction of them are wearing blue sport's wear? _____

c. What fraction of them are wearing purple sport's wear? _____

d. What fraction of them are wearing green sport's wear? _____

e. Write a fraction sum for the clothing of all the people doing exercises.

_____

4. Look at the building. Answer the questions.

a. What fraction of the building is yellow? _____ pink? _____ orange? _____ green? _____

b. Write a fraction sum to show the colours of the building. _____

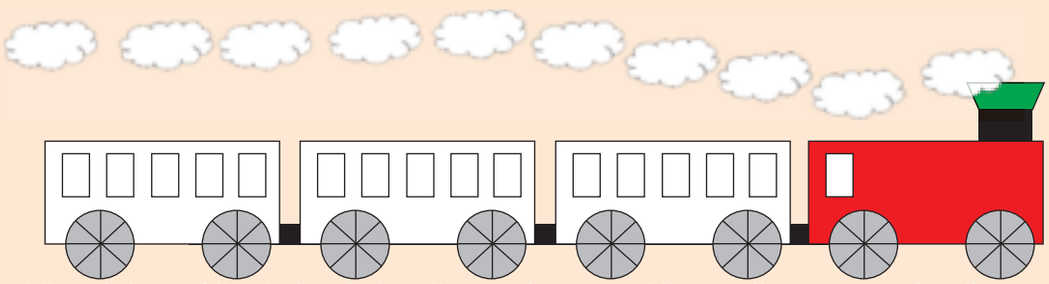
c. What fraction of the building has windows? _____

d. What fraction of the building has a door? _____

e. Complete the table below:

Fraction of building	$\frac{1}{12}$	$\frac{2}{12}$	$\frac{3}{12}$	$\frac{4}{12}$	$\frac{5}{12}$	$\frac{6}{12}$	$\frac{7}{12}$	$\frac{8}{12}$	$\frac{9}{12}$	$\frac{10}{12}$
Windows panes	4									

My own questions



Look at the picture of the train. Colour the carriages and then write your own fraction question. Remember it should be different from the questions in the worksheet.

Sign:

Date:

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

74a Measuring and recording mass

What would you weigh with the following measuring instruments? Give three examples.



1. Would you weigh the following in grams or kilograms?

a. A dog:

b. Sugar for baking a cake:

c. A paper clip:

d. Your friend:

2. Give three examples of each: Something that weighs:

a. between 1 kg and 2 kg.

b. less than 1 kg but more than 500 g

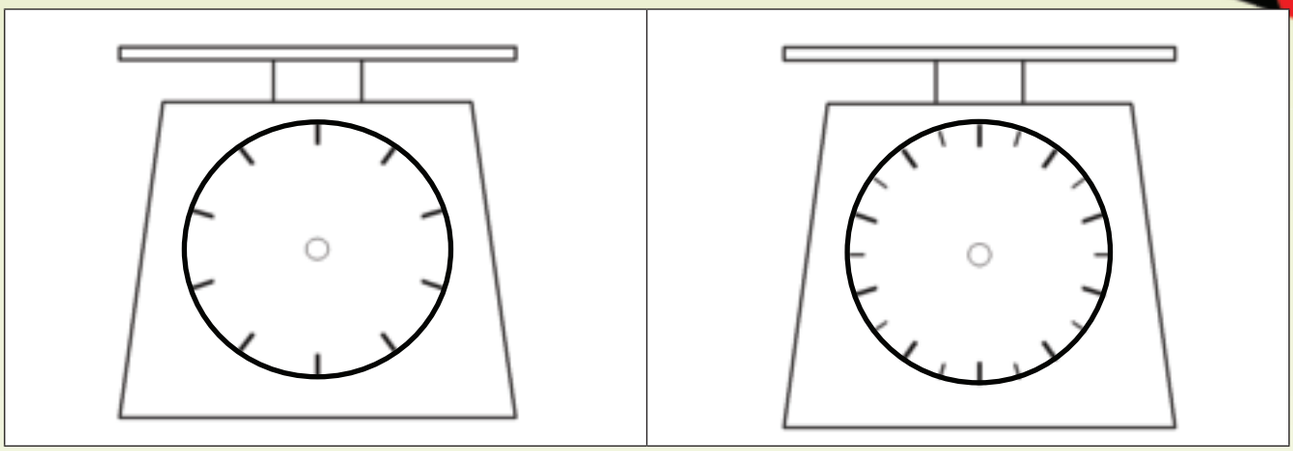
c. more than 1,5 kg but less than 2 kg

d. less than 5 000 g but more than 2 kg

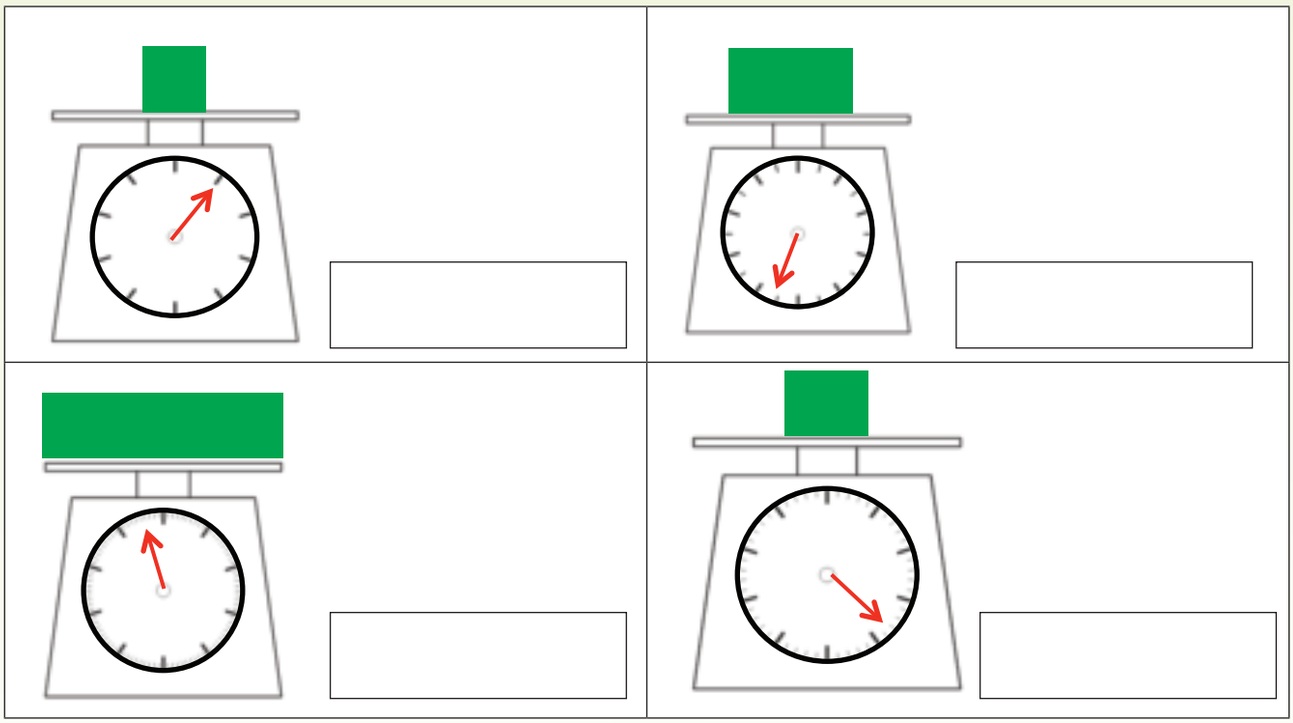
e. between 2 500 g and 3 kg



3. Fill in the intervals on these two 10 kg scales.



4. Complete the intervals on these 10 kg scales. How much do the objects weigh?



5. Calculate the total mass of all the objects.

Remember to add the grams first and then the kilograms.

Sign:

Date:

continued ☛

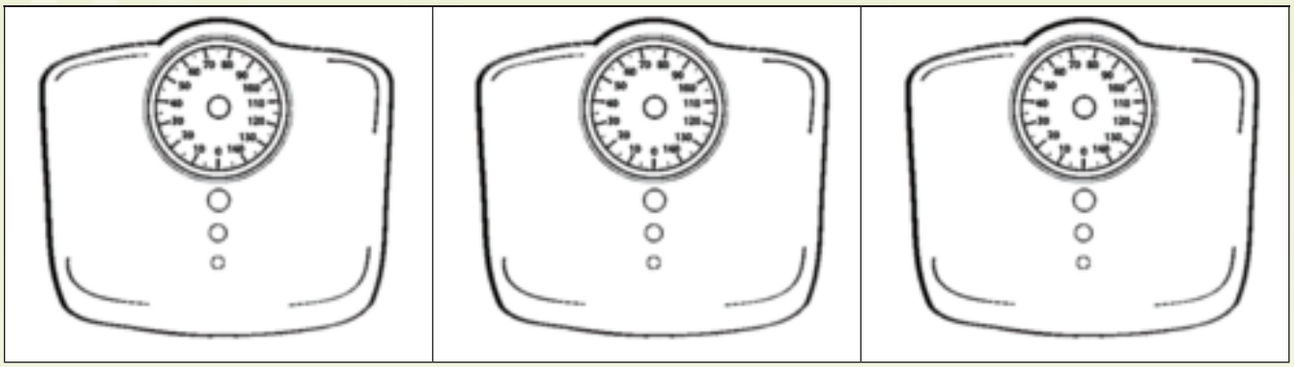
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Measuring and recording mass

continued

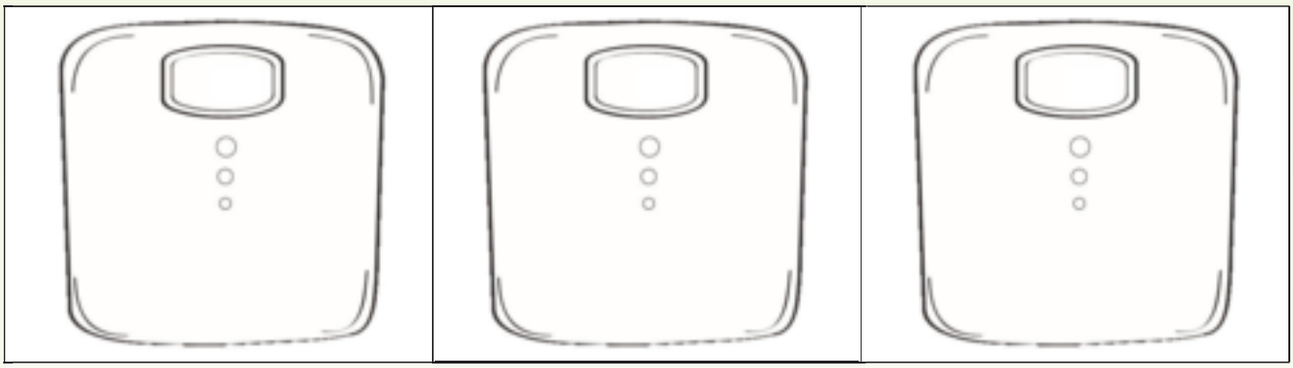
6. Draw the pointer to these positions on the bathroom scales.

a. 57 kg 500 g b. 125 kg c. 32,5 kg



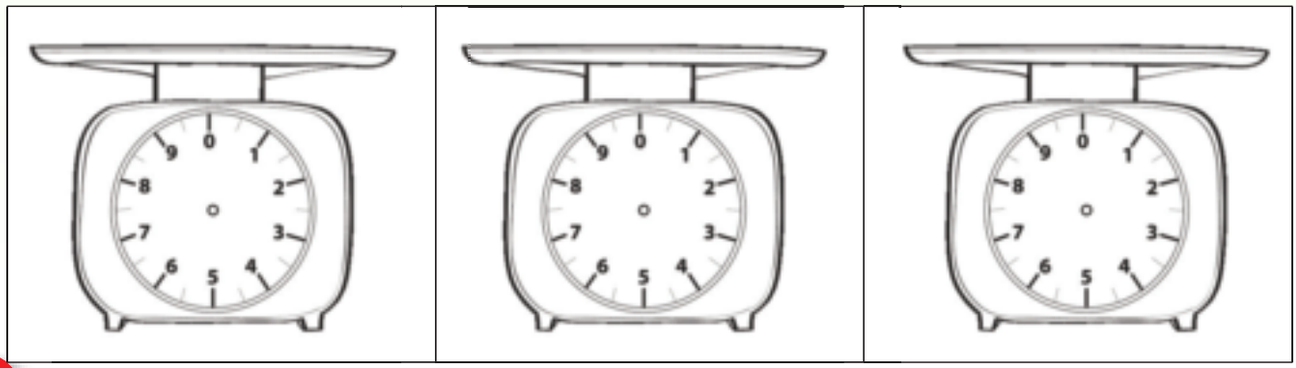
7. Write the following as it would appear on the scale.

a. 75 kg 500 g b. 125 kg c. 146 kg 500 g



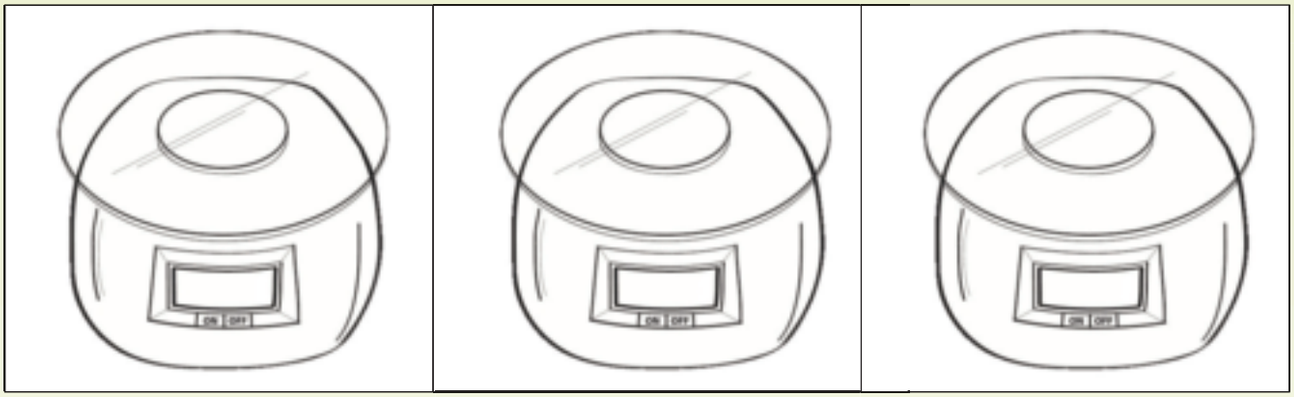
8. Draw the pointer to the following positions on the scale. Draw or paste an appropriate picture for the mass shown.

a. 2 kg b. 3 kg 500 g c. 4 kg 750 g



9. Write the following as it would appear on the scale.

a. 4 kg b. 7 kg 500 g c. 3 $\frac{1}{2}$ kg



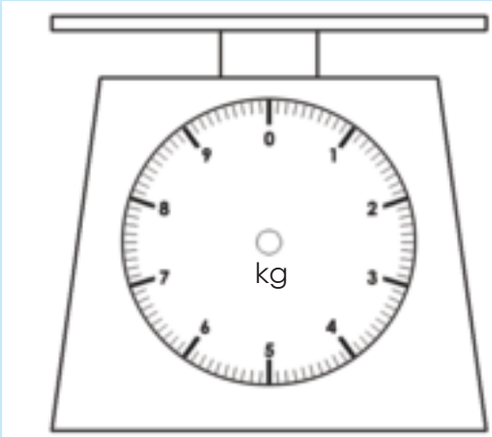
10. Find pictures and paste in or draw pictures and write the names of five objects that weigh more than 2 kg 500 g but less than 5 000 g.

Sign:

Date:

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

75 Mass – converting measurement units



- What do the intervals from 0 to 1 mean? 1 to 2? 8 to 9?
- Let us count: 100 g, 200 g, 300 g, 400 g, 500 g, 600 g, 700 g, 800 g, 900 g, 1kg, 1 kg 100 g, 1 kg 200 g, 1 kg 300g …
- We say there are 1 000 grams in 1 kilogram.

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

i. kilograms and
ii. grams

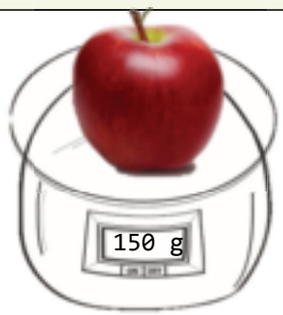
a.



i. _____

ii. _____

b.



i. _____

ii. _____

c.



i. _____

ii. _____

d.



i. _____

ii. _____

2. 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 = _____

3. 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 = _____

4. 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? Give your answer in kilograms and grams.



Weighing the dog

Four friends weigh their dogs. Which dogs weigh the same? Susan's dog weighs 3 500 g, Mandla's dog weighs 3 kg 50 g, John's dog weighs 3 kg 500 g and Kevin's dog weighs 3,5 kg.

Sign:

Date:

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

76 Mass

Which instruments will you use to measure the mass of an object?










1. Colour the blocks that will give the total on the left:

a.	1 kg	100 g	200 g	300 g	250 g	350 g	450 g	500 g	550 g
b.	3.5 kg	1 kg	500 g	250 g	125 g	100 g	1 kg	1 kg	25 g
c.	2.5 kg	2 kg	2 kg 500 g	1 kg	1 kg 500 g	500 g	1 kg	25 g	6 kg
d.	0.5 kg	1 kg	100 g	50 g	1,5 kg	200 g	1,5 kg	100 g	150 g
e.	1.5 kg	1 kg	100 g	100 g	100 g	100 g	50 g	50 g	1 kg

2. I can write:

a. 1 kg 200 g as _____

b. 3 kg 500 g as _____

c. 2 kg 500 g as _____

d. 4 kg 500 g as _____

e. 1 kg 200 g as _____

f. 2 kg 300 g as _____

g. 7 kg 100 g as _____

h. 4 kg 750 g as _____

i. 3 kg 250 g as _____

j. 6 kg 125 g as _____

3. Write the following as kg and g:

a. 6,5 kg = 6 kg 500 g

b. 7,5 kg = _____

c. 9,2 kg = _____

d. 8,4 kg = _____

e. 10,9 kg = _____

f. 5,3 kg = _____

g. 1,15 kg = _____

h. 4,25 kg = _____

i. 2,125 kg = _____

j. 3,172 kg = _____

4. A big bag of dog food contains 9 kg. John used 500 g the first day and 500 g the next day. He then divided the rest equally into 16 separate small bags. What is the mass of each of these small bags.

Continue on an extra sheet of paper

Gram, kilogram fun

Look at a newspaper or advertising mail (sometimes called junk mail). Find items which measurements are given in grams and kilograms.



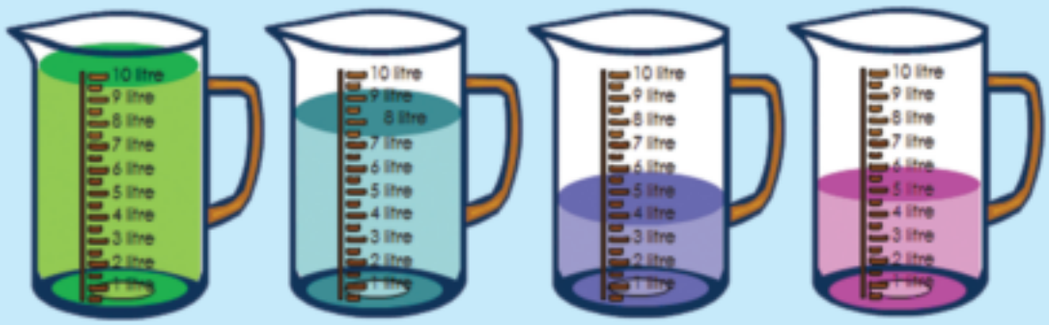
Sign:

Date:

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

77 Fractions in use

How many litres of cool drink are in each jug?



1. Answer the following questions:

a. How many 500 ml are there in 4 litre? 8

Let us count in litres: 0,5 ℓ; 1 ℓ; 1,5 ℓ; 2 ℓ; 2,5 ℓ; 3 ℓ; 3,5 ℓ; 4 ℓ; ...

b. How many 500 ml are there in 6,5 ℓ? _____

Let us count in litres: _____

c. How many 500 ml are there in 2 ℓ? _____

Let us count in litres: _____

d. How many 500 ml are there in 9,5 ℓ? _____

Let us count in litres: _____

e. How many 500 ml are there in 8 ℓ? _____

Let us count in litres: _____

f. How many 500 ml are there in 7,5 ℓ? _____

Let us count in litres: _____

g. How many 500 ml are there in 12,5 ℓ? _____

Let us count in litres: _____

2. Answer the following questions.

a. How many 500 g are there in 2 kilograms? 4

Let us count in kilograms : 0,5 kg; 1 kg; 1,5 kg; 2 kg

b. How many 500 g are there in 4,5 kg? _____

Let us count in kilograms: _____

c. How many 500 g are there in 5,5 kg? _____

Let us count in kilograms: _____

d. How many 500 g are there in 7,5 kg? _____

Let us count in kilograms: _____

e. How many 500 g are there in 9 kg? _____

Let us count in kilograms: _____

f. How many 500 g are there in 10,5 kg? _____

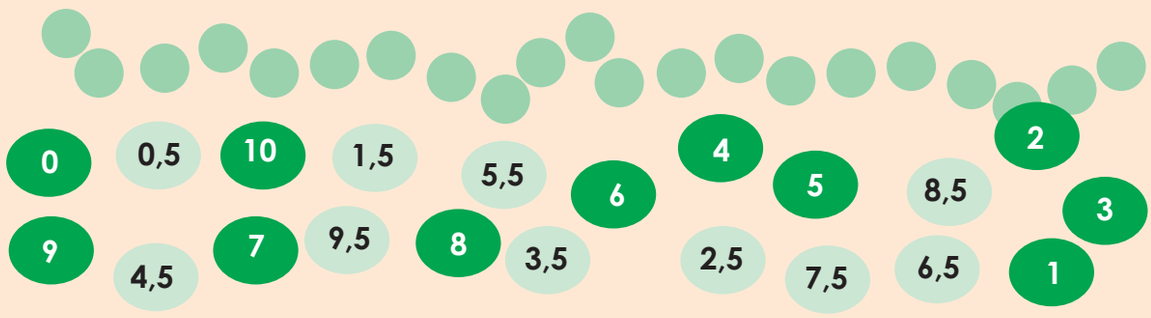
Let us count in kilograms: _____

g. How many 500 g are there in 14,5 kg? _____

Let us count in kilograms: _____

Fraction hunt

I drop the numbered circles onto the blank circles. Help me to draw a decimal worm.



Sign:

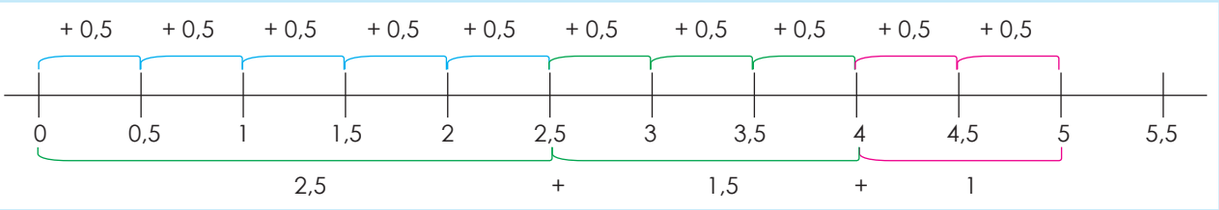
Date:

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

78 Problems doing measuring

Number line

I jogged 2,5 kilometres on the first day, 1,5 km on the second day and 1 km on the third day. How far did I jog in 3 days?



1. Answer the questions using a number line to show your answer.

Jane baked 4,5 kg of cakes in the first week, 3 kg in the second week, 1,5 kg in the third week and 5,5 kg in the fourth week.

a. What is the total mass of all the cakes baked in four weeks?
b. Write the total mass of the cakes baked in grams.
c. What is the difference between the mass baked in the first week and the weight baked in the fourth week?
d. What is the difference between the mass baked in the second week and the weight baked in the third week?
e. What is the total of the mass baked in the first week and the mass baked in the fourth week?

Term 3

2. Study the following recipe for scones and answer the following questions. Make a drawing or use a number line to solve it.

1,5 kg margarine
10 cups flour
50 g baking powder
0,5 litres milk
0,5 kg sugar
5 eggs
5 bottle tops vanilla essence

a. If we have one egg, how many grams of margarine are we going to need?
b. If I use one litre of milk, how much sugar will I need?
c. 1,5 kg of sugar will need how many litres of milk?
d. How much margarine will 20 cups of flour need?
e. What is half of 0,5 litres?

Make your own word sums

Use the decimals to make your own word sums.

Mass

0,5 kg
1,5 kg
1,5 kg
2 500 g

Capacity

2 500 ml
2,5 litres
0,5 litres
1,5 litres

Length

0,5 metres
10,5 metres
6,5 metres
8 metres

Sign:

Date:

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

79 Numbers 0 – 50 000



1. Look in a newspaper for as many numbers as you can that are bigger than 20 000 but smaller 50 001. Paste them here. Explain what they mean.

2. Complete the following:

a. 30 000 + 8 000 + 700 + 50 + 1 = _____

b. 3 000 + 20 000 + 8 + 500 + 40 = _____

c. 60 + 9 + 200 + 5 000 + 10 000 = _____

d. 40 000 + 3 000 + 6 = _____

e. 20 000 + 600 + 8 = _____

3. Change the digit 5 to zero in each number. Show the operation that will make it zero.

a. 47 523 = 47 523 - 500 = 47 023

b. 28 325 = _____

c. 14 952 = _____

d. 35 040 = _____

e. 50 000= _____



4. **Your mother has to pay some bills. Assist her to fill in the four blank cheques. Use the amounts in the yellow tags.**



5. **Write in expanded notation. Use the digits to make five different 5-digit numbers smaller than 50 000 but bigger than 20 000. Use a digit only once in a number.**

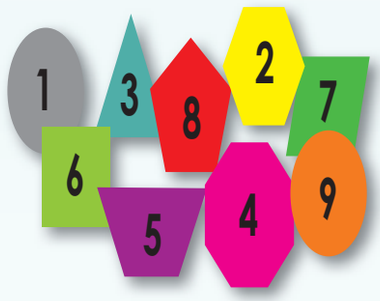
a. 38 549 = 30 000 + 8 000 + 500 + 40 + 9

b. _____

c. _____

d. _____

e. _____



Magazines and newspapers

Find items advertised for sale between R20 000 and R50 000.

Paste three examples here.



Sign:

Date:

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

80 Rounding off

What would you rather say?



My mother is going to purchase lounge suite for **R11 835.**

My mom is going to purchase a lounge suite for **R12 000.**



My brother is going to buy a flat screen television for **R10 250.**

My brother is going to buy a flat screen for **R10 000.**



The truck transported **14 772** potatoes.

The truck transported **15 000** potatoes.

1. Between what two ten-thousands do the following numbers lie:

a. 14 789	14 000	15 000	b. 13 472		
c. 12 234			d. 15 893		
e. 17 578			f. 16 178		
g. 11 943			h. 18 389		
i. 10 178					

2. Give any number between

a. 20 000 and 30 000 _____

b. 30 000 and 40 000 _____

c. 10 000 and 20 000 _____

d. 40 000 and 50 000 _____

3. Go back to the numbers you wrote in question 2. Underline the ten thousand that is closest to your answer. Example:

20 000 and 30 000 | **20 387**

4. Round off to the nearest 10. Circle the digits which you look at when deciding whether to round up or down to the nearest 10. Complete the sentences.

a. 44 321 is between 44 320 and 44 330 and would be rounded to 44 320.
b. 23 548 is between _____ and _____ and would be rounded to _____.
c. 16 648 is between _____ and _____ and would be rounded to _____.
d. 33 339 is between _____ and _____ and would be rounded to _____.
e. 49 999 is between _____ and _____ and would be rounded to _____.

5. Round off to the nearest 100. Circle the digits which you look at when deciding whether to round up or down to the nearest 100. Complete the sentences.

a. 13 548 is between 13 500 and 13 600 and would be rounded to 13 500.
b. 20 488 is between _____ and _____ and would be rounded to _____.
c. 34 078 is between _____ and _____ and would be rounded to _____.
d. 39 529 is between _____ and _____ and would be rounded to _____.
e. 29 956 is between _____ and _____ and would be rounded to _____.

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

a. 11 781 is between 11 000 and 12 000 and would be rounded to 12 000.
b. 18 945 is between _____ and _____ and would be rounded to _____.
c. 20 378 is between _____ and _____ and would be rounded to _____.
d. 31 069 is between _____ and _____ and would be rounded to _____.
e. 49 500 is between _____ and _____ and would be rounded to _____.

Help a friend



Your friend doesn't understand rounding off to the nearest 10, 100 and 1 000.
Make a drawing of the rounded numbers below.

14 894 **28 234** **46 434**

Sign:

Date:

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

81a All about whole numbers

Term 3

Look at the numbers and answer the questions.

187 536



Give the number in expanded notation.

What is the value of the:

- 1?
- 8?
- 7?
- 5?
- 3?
- 6?

- Count three numbers **forwards** from this number, in 2s, 3s, 5s and then 10s.
- Count three numbers **backwards** from this number, in 2s, 3s, 5s and then 10s.

187 000



- Count three numbers **forwards** from this number, in 25s, 50s and then 100s.
- Count three numbers **backwards** from this number, in 25s, 50s and then 100s.

1. Write the following in expanded notation.

a. 238 571	200 000 + 30 000 + 8 000 + 500 + 70 + 1
b. 443 006	
c. 747 523	
d. 235 040	

2. What is the place value of the underlined digit?

a. 44 321	b. 233 339	c. 929 956
	9	

3. Count three numbers forwards in 2s, 3s, 5s and 10s from the given number.

a. 11 781	b. 31 069	c. 96 434
2s: _____, _____, _____	2s: _____, _____, _____	2s: _____, _____, _____
3s: _____, _____, _____	3s: _____, _____, _____	3s: _____, _____, _____
5s: _____, _____, _____	5s: _____, _____, _____	5s: _____, _____, _____
10s: _____, _____, _____	10s: _____, _____, _____	10s: _____, _____, _____

4. Count three numbers backwards in 2s, 3s, 5s and 10s from the given number.

a. 46 703

2s: _____, _____, _____

3s: _____, _____, _____

5s: _____, _____, _____

10s: _____, _____, _____

b. 293 254

2s: _____, _____, _____

3s: _____, _____, _____

5s: _____, _____, _____

10s: _____, _____, _____

c. 136 846

2s: _____, _____, _____

3s: _____, _____, _____

5s: _____, _____, _____

10s: _____, _____, _____

5. Count three numbers forwards in 25s, 50s and 100s from the given number.

a. 16 470

25s: _____, _____, _____

50s: _____, _____, _____

100s: _____, _____, _____

b. 790 235

25s: _____, _____, _____

50s: _____, _____, _____

100s: _____, _____, _____

c. 646 580

25s: _____, _____, _____

50s: _____, _____, _____

100s: _____, _____, _____

6. Count three numbers backwards in 25s, 50s and 100s (descending order).

a. 384 755

25s: _____, _____, _____

50s: _____, _____, _____

100s: _____, _____, _____

b. 57 360

25s: _____, _____, _____

50s: _____, _____, _____

100s: _____, _____, _____

c. 825 090

25s: _____, _____, _____

50s: _____, _____, _____

100s: _____, _____, _____

7. Write the following from the smallest to the biggest (ascending order).

a. 254 562, 254 526, 254 625, 254 256

b. 215 487, 215 784, 215 478, 215 748

8. Write the following from the biggest to the smallest (descending order).

a. 734 588, 785 848, 754 625, 754 858

b. 84 257, 84 752, 84 275, 84 725

Sign:

Date:

continued ☛

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

81b All about whole numbers continued

9. Look at the following 5-digit numbers.

53 001	53 018
21 503	53 102
21 005	21 054

a. Identify all the **even numbers**.

b. How do you know it is an even number?

c. Is zero an even number?

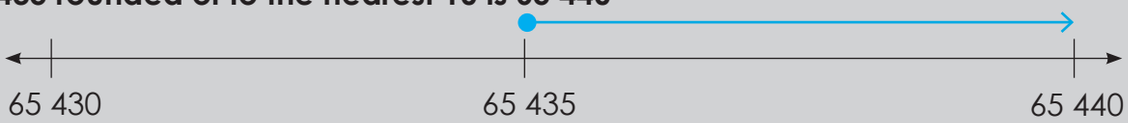
d. Identify all the **odd numbers**.

e. How do you know it is an odd number?

10. Look at the rounded off numbers and number lines and answer the questions.

	To the nearest 10	To the nearest 100	To the nearest 1 000	To the nearest 10 000
65 435	65 440	65 400	65 000	70 000

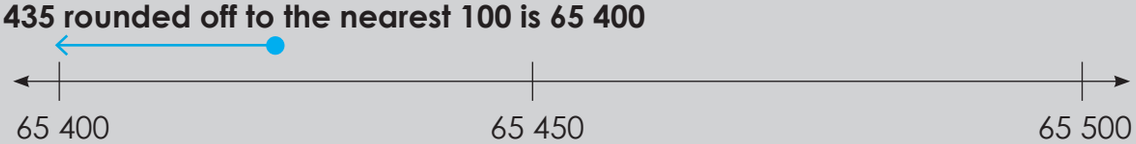
65 435 rounded of to the nearest 10 is 65 440



a. Where do the 65 430 and 65 440 on the number line come from?

b. On what number is the blue dot? Why?

65 435 rounded off to the nearest 100 is 65 400



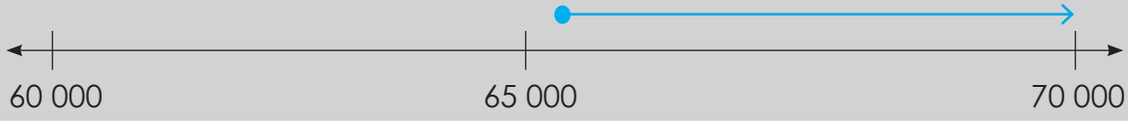
c. Why is the arrow pointing in this direction?

65 435 rounded off to the nearest 1 000 is 654 000



d. Why is the arrow pointing in this direction?

65 435 rounded off to the nearest 10 000 is 70 000



e. Why do the 60 000 and 70 000 now appear on the number line?

11. Round off the following numbers to the nearest 5.

a. 95 541	b. 25 387	c. 94 025
95 540		
d. 19 976	e. 78 573	f. 93 254
g. 26 582	h. 53 899	i. 76 481

Big numbers with meaning

Find five 5-digit numbers in a newspaper or magazine. What do each of these numbers mean?

What would happen if you removed that number from the text in the magazine or newspaper?

Sign:

Date:

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

82a Addition and subtraction

What is the difference between the numbers? Count forwards.

10 000	20 000	30 000	40 000	50 000
6 700	16 700	26 700	36 700	46 700
33 500	34 500	35 500	36 500	37 500
5 666	15 666	25 666	35 666	45 666
9 999	10 099	10 199	10 299	10 399

What is the difference between the numbers? Count backwards.

1. What number comes next?

a. 12 000, 22 000, 32 000, _____

b. 14 500, 15 500, 16 500, _____

c. 16 666, 26 666, 36 666, _____

d. 19 620, 20 620, 21 620 , _____

2. Complete the table: Add to or subtract from the given number.

Number	Add 1 000	Subtract 1 000	Add 10 000	Subtract 10 000
13 254				
18 654				
26 847				
34 518				
37 777				



Examples:

Example 1:

36 864 + 9 654
= 30 000 + 6 000 + 9 000 + 800 + 600 + 60 + 50 + 4 + 4
= 30 000 + 15 000 + 1 400 + 110 + 8
= 30 000 + 10 000 + 5 000 + 1 000 + 400 + 100 + 10 + 8
= 40 000 + 6 000 + 500 + 10 + 8
= 46 518

Example 2:

	3	6	8	6	4	
+		9	6	5	4	
					8	(4 + 4)
			1	1	0	(60 + 50)
		1	4	0	0	(800 + 600)
	1	5	0	0	0	(6 000 + 9 000)
+	3	0	0	0	0	(30 000 + 0)
	4	6	5	1	8	

Test your answer.

	4	6	5	1	8	
–	3	6	8	6	4	
					4	(8 – 4)
				5	0	(110 – 60)
			6	0	0	(1 400 – 800)
		9	0	0	0	(15 000 – 6 000)
					0	(30 000 – 30 000)
		9	6	5	4	



Sign:

Date:

continued ☛

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

82b Addition and subtraction continued

3. Use both methods shown on the previous page to calculate each of the following. Write down the steps.

a. 95 242 – 42 135 =

b. 62 363 – 21 057 =

Continue on an extra sheet of paper

c. 86 843 – 41 028 =

d. 12 748 + 13 887 =

Continue on an extra sheet of paper

e. 14 678 + 16 846 =

f. 27 654 + 16 956 =

Continue on an extra sheet of paper



4. Work out the word problems below. Make use of pictures to show your answer.

a. Jacob has 3 090 jellybeans. He gave 1 295 to his teacher and he ate 277. How many jellybeans were left?

Continue on an extra sheet of paper

b. In a recent survey, 21 550 people said they liked only chocolate ice cream and 24 550 said they liked only vanilla. How many people were in the survey?

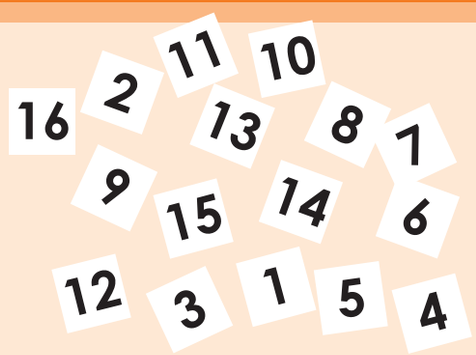
Continue on an extra sheet of paper

I dropped my puzzle pieces.

What to do.

I dropped my puzzle pieces. Help me to fill the spaces so that each row and column adds up to 34. You can only use each number once.

16			
	10		
		7	
			1



Sign:

Date:

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

83 Solving money problems with a budget

Can you remember what a budget is? Use the words to describe it.



plan

money

spending

1. How much money do I have? if___

a. I had R95,20. I spend R42,30. I earn R36,50. _____

b. I had R75,60. I spend R69,30. I earn R44,20. _____

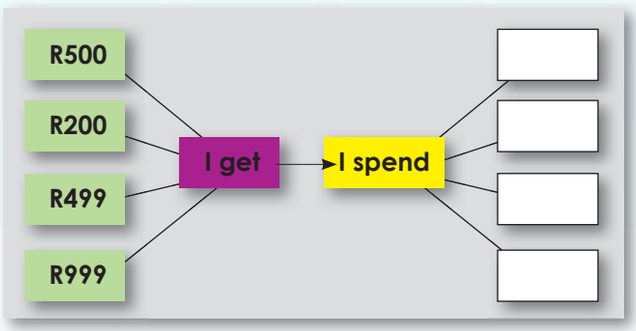
c. I had R100,75. I spend R37,25. I earn R46,15. _____

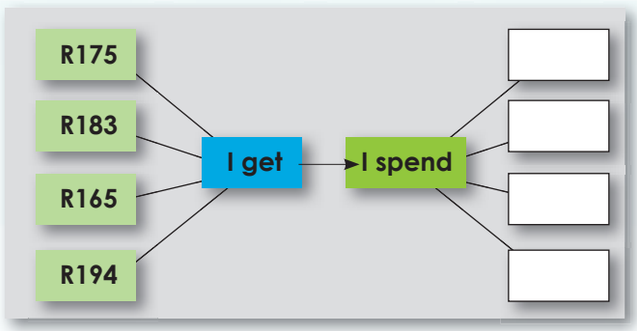
d. I had R97,65. I spend R89,75. I earn R43,95. _____

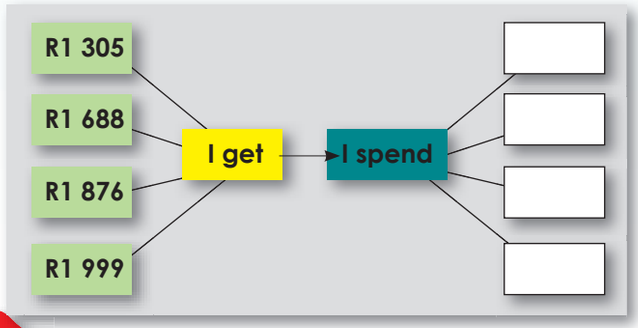
e. I had R195,25. I spend R108,98. I earn R58,99 _____

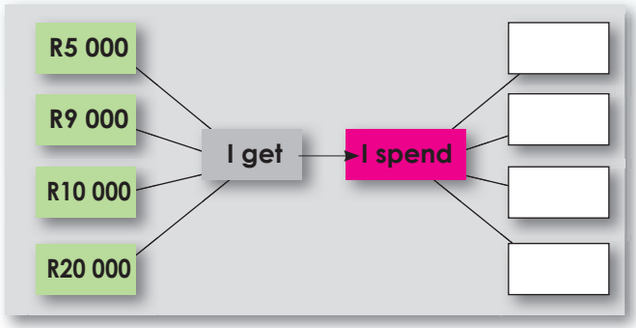
2. Complete these flow diagrams. Replace the "I spend" block with the amount in the matching coloured block at the top.

R300 R200 R5 000 R2 000 R1 200 R1 300 R2 500 R2 500

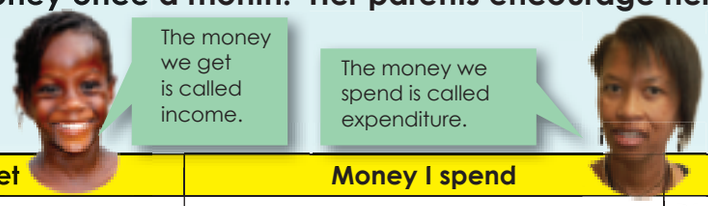








3. Mbali earns pocket money once a month. Her parents encourage her to keep a budget.



Oct	Money I get	Money I spend	Money left
5	Pocket money R150,00		R150,00
8		Book R45	R105,00
14	Extra chores R25,00		R130,00
22	Birthday present R55,00		R185,00
25		Hamburger R28	R157,00
26	Extra chores R25,00		R182,00
28		DVD on special R55,00	R127,00
29		Gift for friend R65,50	R61,50

a. What was Mbali's income on the 5th of October? _____

b. What was Mbali's expenditure on the 8th of October? _____

How much money does she have left on that day? _____

c. On the 8th of October Mbali had R105,00 left.

Why does she have R130,00 left on the 14th of October? _____

d. On the 14th of October Mbali had R130,00 left. On the 26th of October Mbali had R182,00 left.

What happened? _____

e. Write down all the income and expenditure Mbali had for the month of October.

Income	Expenditure

Budget

Draw up you own budget. It can be real or you can make up one.

Sign:

Date:

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

84 Using the vertical column method to add

		1	
	2	5	
+	1	7	
	4	2	

- Add the units (5 and 7) first.
- Note how we split the 12 (5 + 7) into 1 ten and 2 units.
- We then write the 1 ten at the top of the tens column.
- Add up the tens.

Rather than say 'carry over 1' (which does not help us to understand place value) we should say 'write the ten at the top of the tens column'.

1. How fast can you calculate the following using the column method?

a. 73 + 19 =

b. 63 + 28 =

c. 53 + 29 =

2. Calculate the following.:

Example:

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

- Add the units first.
- We split the 12 (3 + 9) into 1 ten and 2 units.
- We then write the 1 ten at the top of the tens column.
- Add up the tens.
- We then split 120 (80 + 30 + 10) into 1 hundred and 2 tens.
- Add up the hundreds.
- Add up the thousands.
- Add up the ten thousands.

a. 95 312 + 2 346 =

b. 47 264 + 1 428 =

c. 45 224 + 3 896 =

d. 44 295 + 2 346 =

e. 38 217 + 4 196 =

f. 61 389 + 5 436 =

3. Calculate the following:

a. 87 125 + 14 997 =

b. 23 238 + 57 986 =

c. 23 476 + 87 895 =

4. Calculate the following:

a. Find the sum of 23 624 and 19 999.

b. Add these two numbers using two different methods: 43 852 +19 620 =

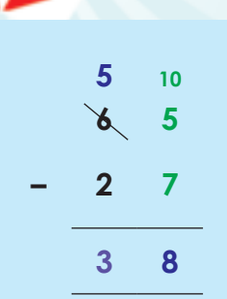
Vehicle sums

My father buys a second-hand car for R64 540 and a motor cycle for R21 350. How much did he pay for the two vehicles?

Sign:

Date:

85 Using the vertical column method to subtract



- **Subtract the units (5 and 7) first.**
- **Take note of how we break down the 60 into 50 + 10. We then add the 10 to the 5; that gives us 15.**
- **Now we can subtract the units.**
- **Subtract the tens.**

Take note that saying 'carry over 1' does not help us to understand place value. Rather say 'We write the 10 at the top of the units column'.

1. How fast can you calculate the following using the column method?

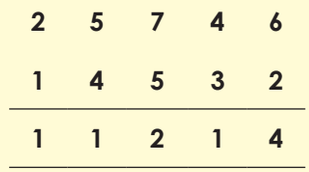
a. 96 – 48

b. 83 – 25

c. 94 – 46

2. Calculate the following:

Example:



- Subtract the units, then
- subtract the tens, then
- subtract the hundreds, then
- subtract the thousands, then
- subtract the ten thousands.

a. 90 237 – 34 012

b. 59 429 – 26 213

c. 65 515 – 23 204

3. Complete the following.

Example:

				3	10
	2	5	7	~~4~~	6
–	1	4	5	3	8
	1	1	2	0	8

- Subtract the units.
- Note how we break down the 40 into 30 + 10. We then add the 10 to the 6; that gives us 16.
- Now we can subtract the units.
- Subtract the tens.
- Subtract the hundreds, thousands and ten thousands.

a. 95 242 – 42 135

b. 62 363 – 21 057

c. 86 843 – 41 028

4. Complete the following.

Example:

		4	10	3	10
	2	~~5~~	7	~~4~~	6
–	1	2	9	3	8
	1	2	8	0	8

a. 41 483 – 10 295

b. 81 536 – 30 269

c. 52 262 – 20 178

5. Test your answers in question 4 using addition. You will need extra paper to do this activity.

The cost of university

My father paid R36 780 for my brother to study at the university this year. The cost next year will rise to R42 990. How much extra would my father pay for my brother next year?

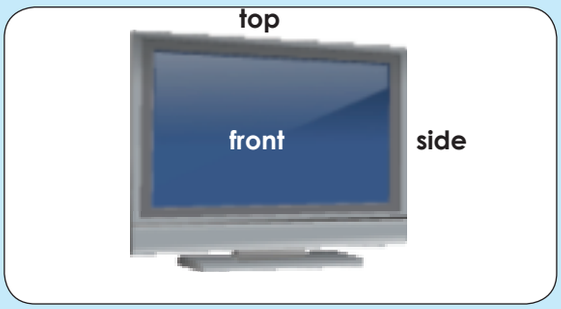
Sign:

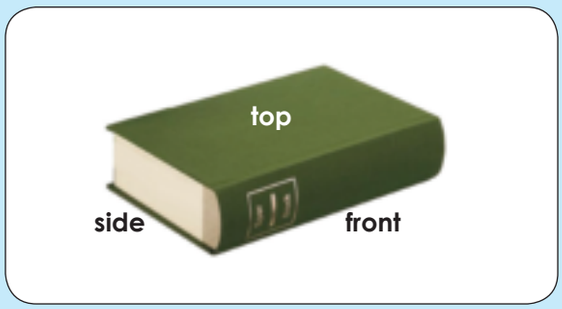
Date:

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

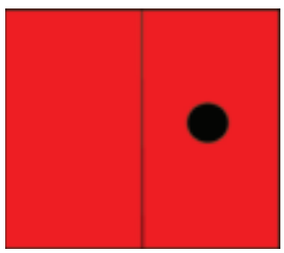
86 Views

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



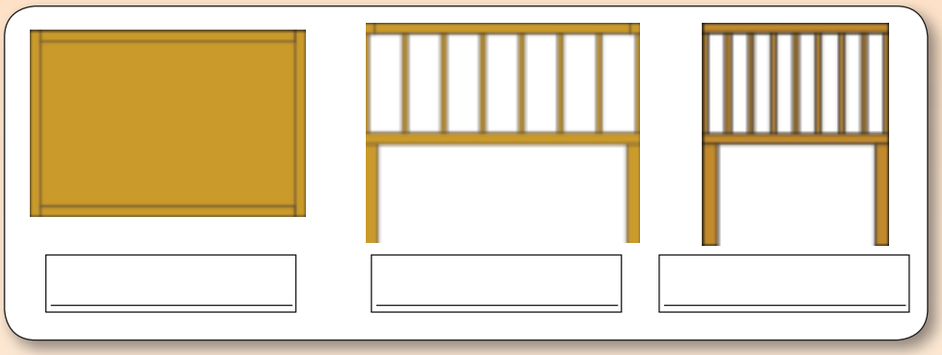


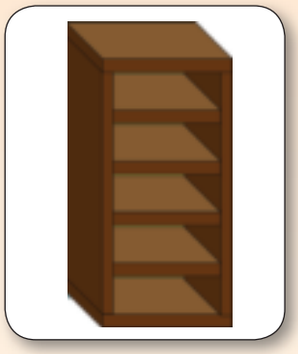
1. Complete the table by drawing the side, front and top views of the houses.

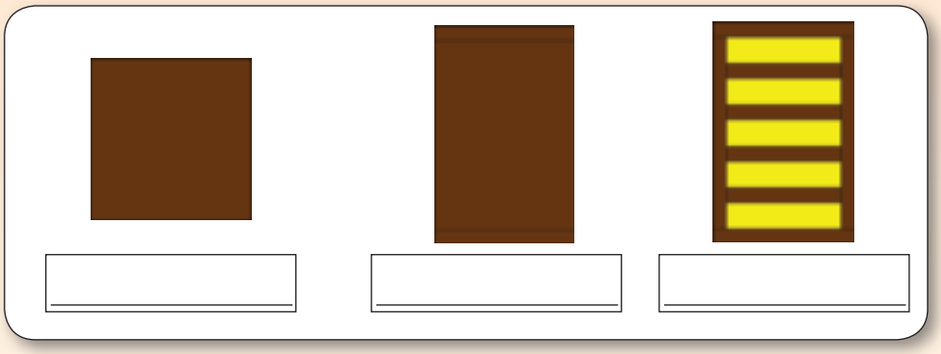
House	Side view	Front view	Top view
			
			
			
			

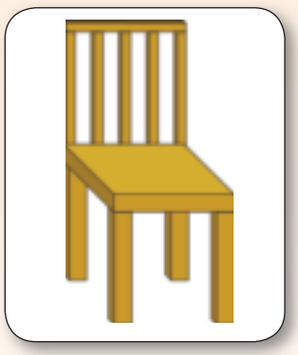
2. Name the following views:

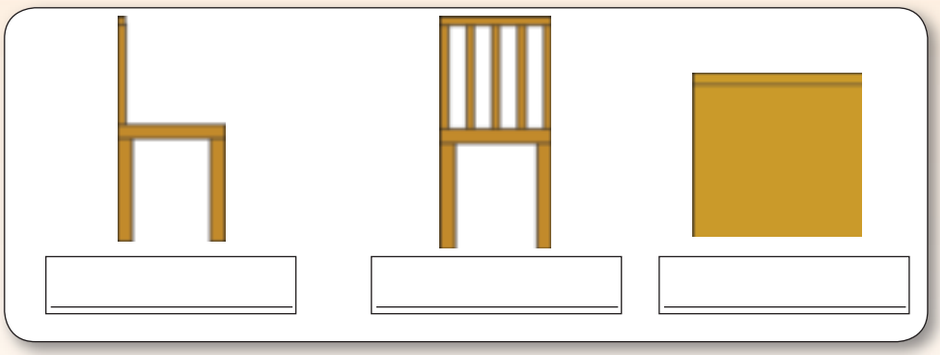












Where is the person standing?



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

87 More views

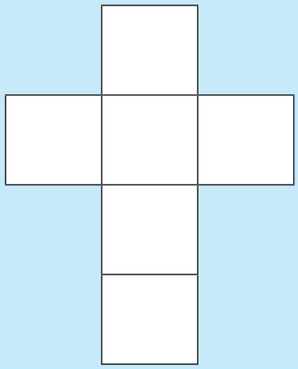
Here are the six faces of a cube:



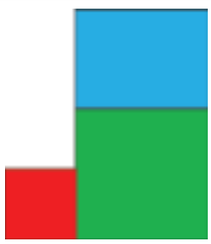
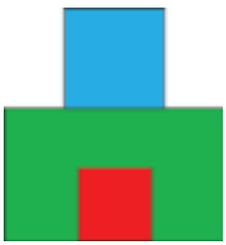
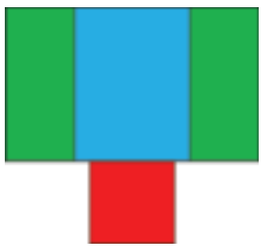
Here are three views of the cube:



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

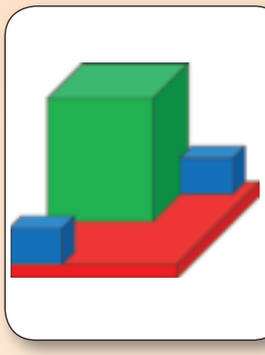


1. Complete the table by drawing the side, front and top views of the blocks.

Picture	Side view	Front view	Top view
			
			
			
			

Term 3

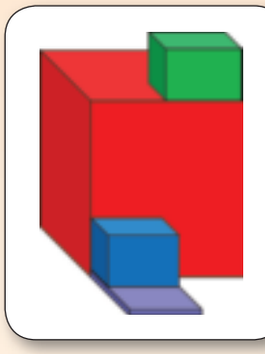
2. Name the following views:





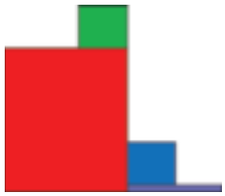


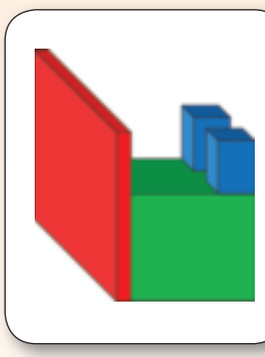




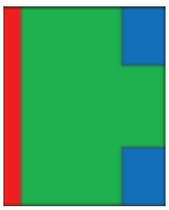














Views

Find a picture in a magazine that is taken from the:

Front view	Top view	Side view

Sign:

Date:

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

88 Polygons

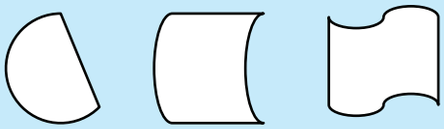
Straight sides:



Curved sides:



Straight and curved sides:



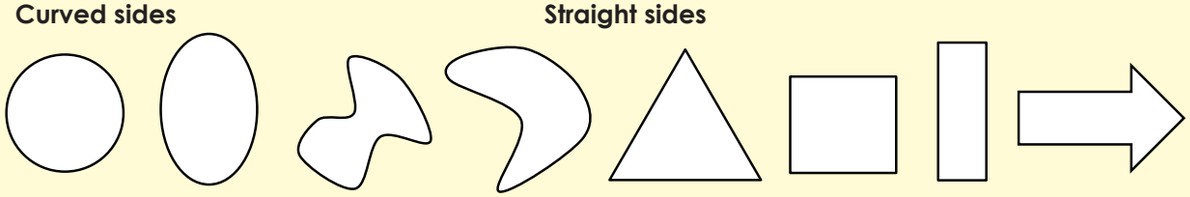
What type of sides will the following shapes have?

- A triangle
- A square
- A rectangle
- A pentagon
- A hexagon

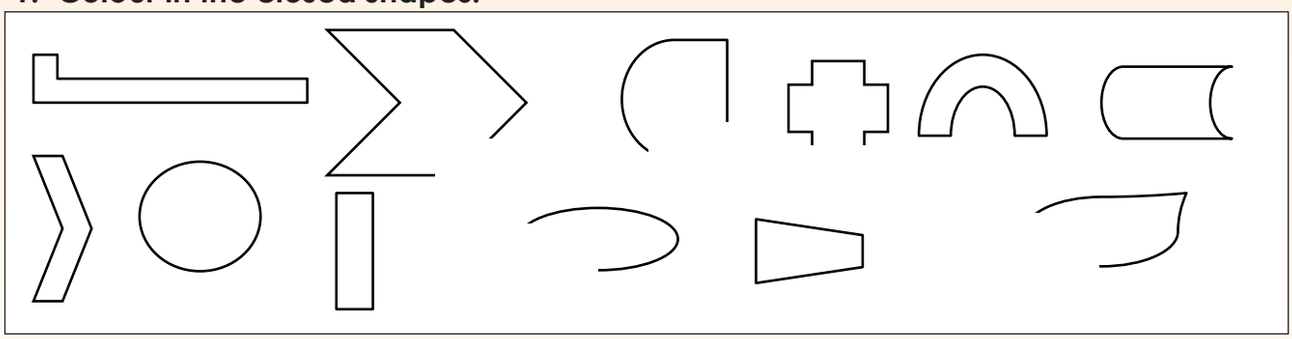
Tri-angle:	Tri – 3
Quad-rilateral:	Quad – 4
Pent-agon:	Pent – 5
Hex-agon:	Hex – 6
Hept-agon:	Hept – 7
Oct-agon:	Oct – 8

Example of closed shapes with curved and straight sides.

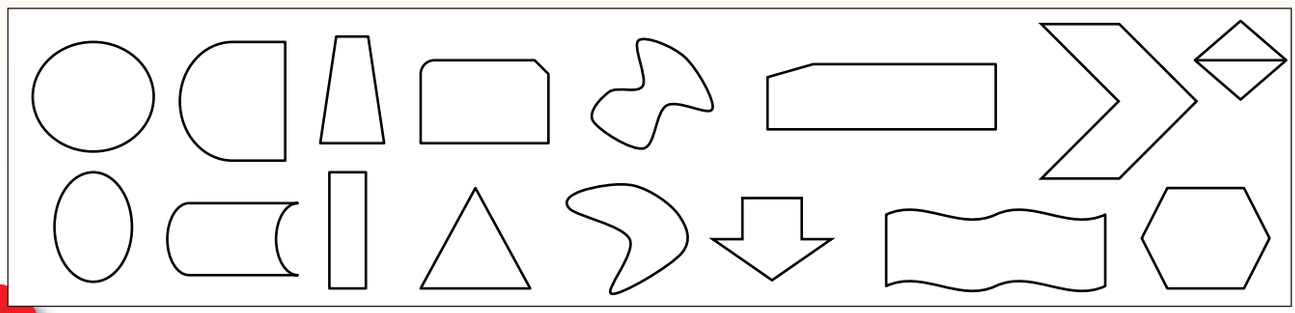
Curved sides **Straight sides**



1. Colour in the closed shapes.

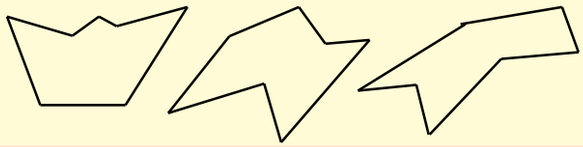


2. Colour in the shapes with straight sides only.

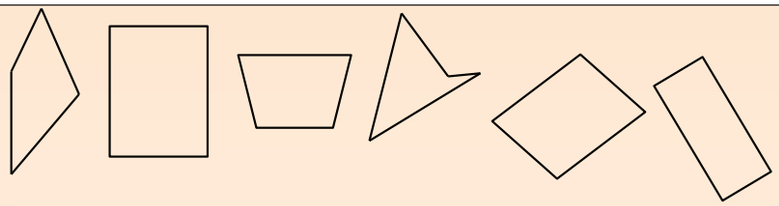


3. These are all closed 2-D shapes. What are their names and why do they have those names?

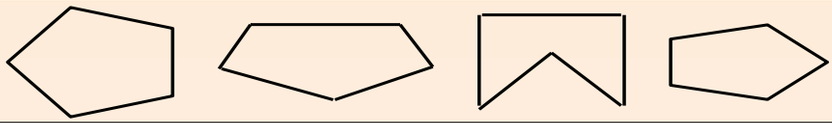
a. **Heptagons because they have seven straight sides.**



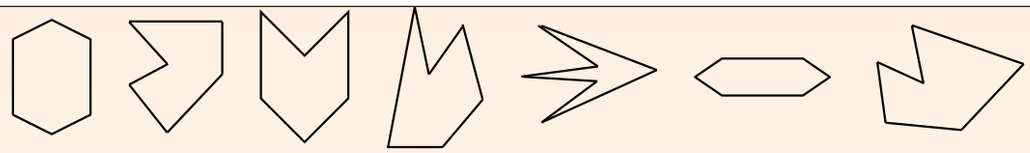
b. _____



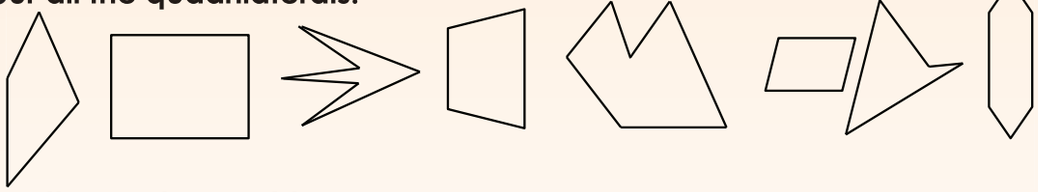
c. _____



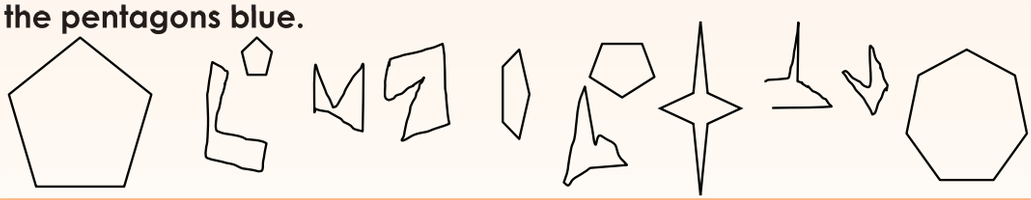
d. _____



3. Colour all the quadrilaterals.

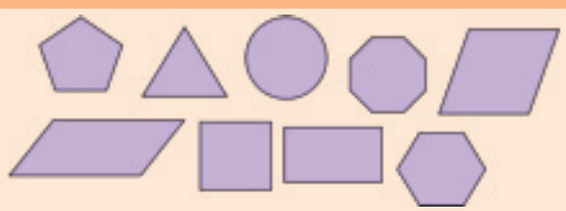


4. Colour the pentagons blue.



Special shapes

Name the shapes below which are quadrilaterals and have special names. If they are quadrilaterals which do not have special names just write "Quad" under it.



Sign:

Date:

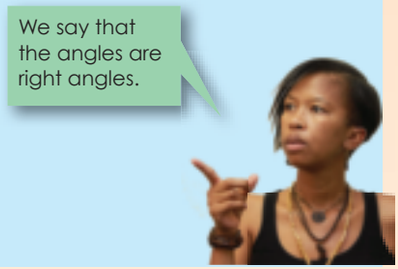
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

89a Right angles

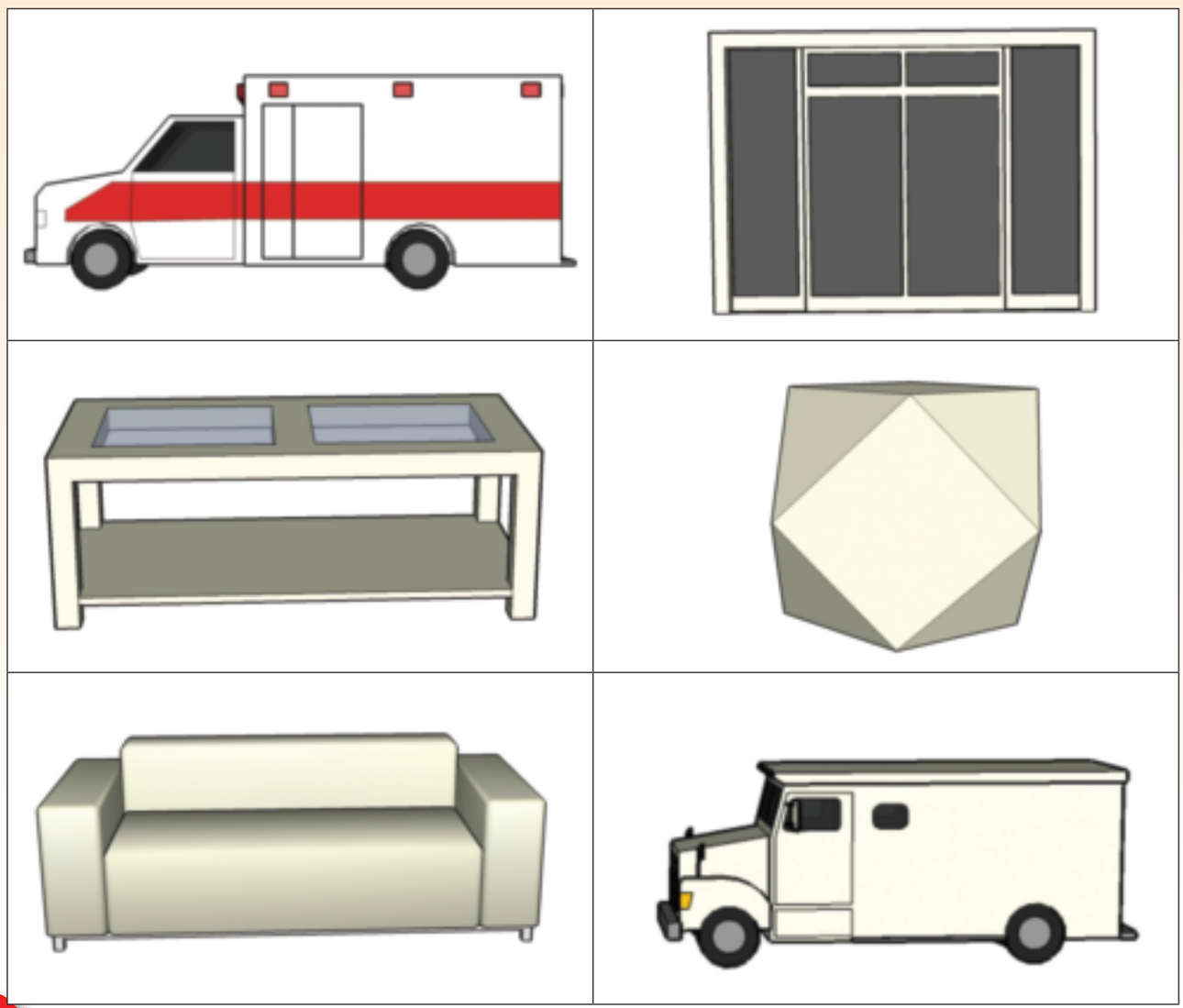
Identify all the things in the picture that look like this:





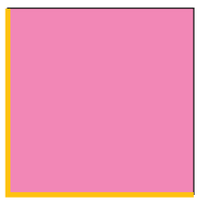
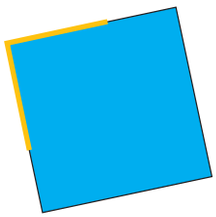
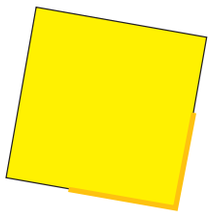
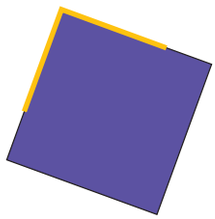


1. Identify and mark as many right angles as possible in the pictures below.



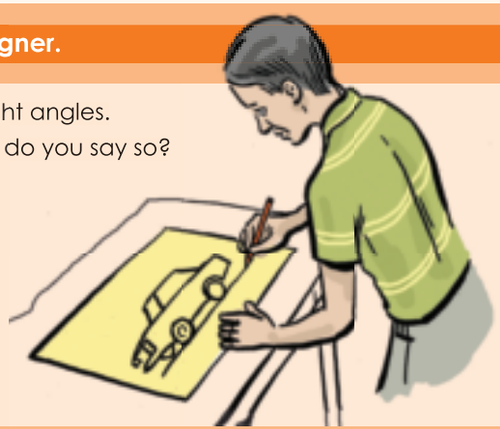
2. Find pictures in magazines or newspapers, and identify the right angles in them.

3. Say if the angles are right angles or not.

a. 	b. 	c. 
d. 	e. 	f. 

I am a car designer.

Draw a picture of a motor car on grid paper mainly with right angles.
Does it look like a modern car or a car from the past? Why do you say so?

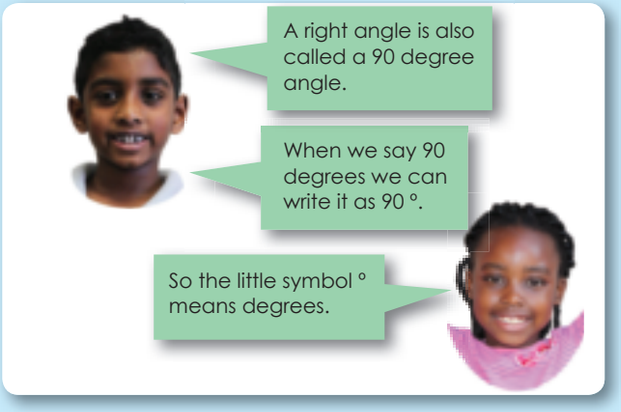


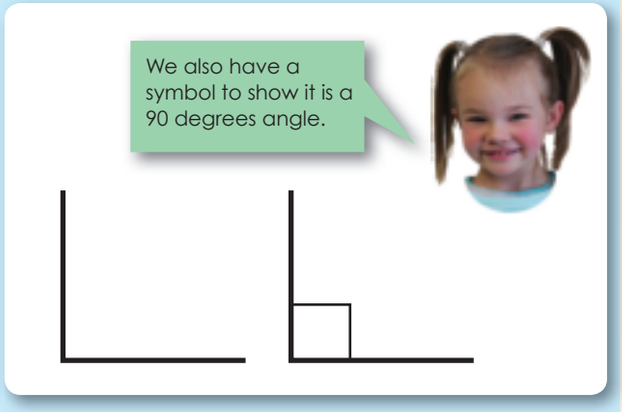
Sign:

Date:

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

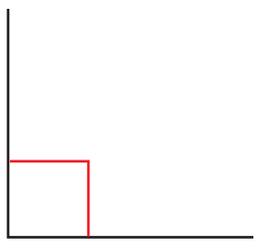
89b More right angles



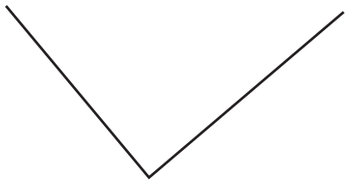


1. Show which is the right angle and write its size in degrees.

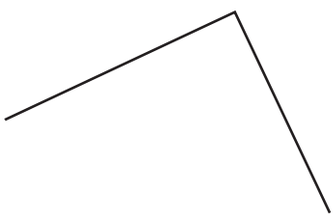
a. 90°



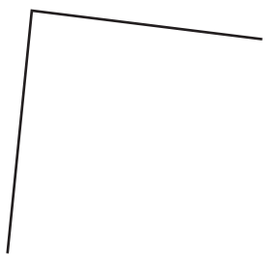
b. _____



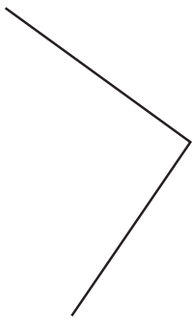
c. _____



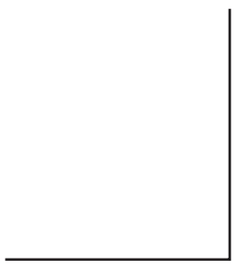
d. _____



e. _____



f. _____



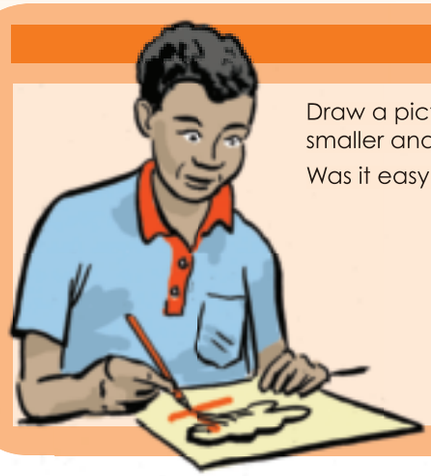
2. Draw four different right angles.

a.	b.
c.	d.

3. Use 90 º angles to help you to draw animals. We did the first one for you.

a. 	b.	c.
d.	e.	f.

I am an architect.



Draw a picture of a building on grid paper using right angles and angles smaller and greater than right angles.

Was it easy or difficult? Why or why not?

Sign:

Date:

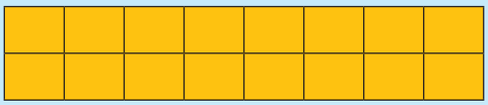
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

90 Tessellation

These three tessellations are regular tessellations.



A tessellation of triangles



A tessellation of squares

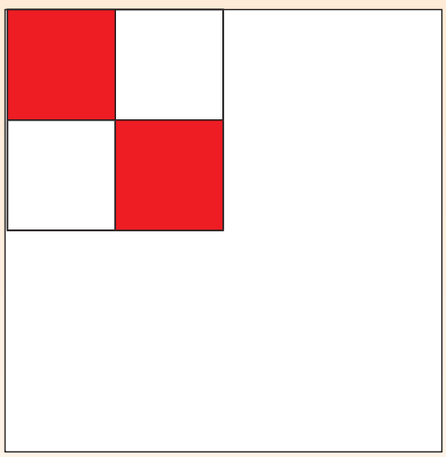


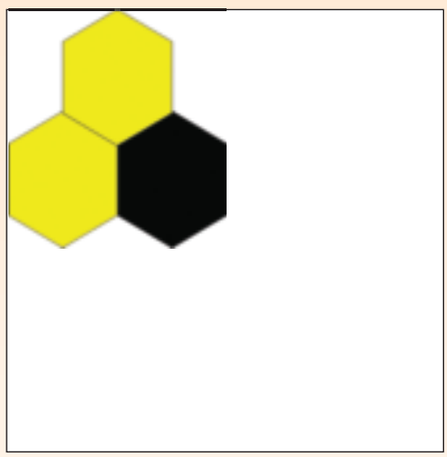
A tessellation of hexagons

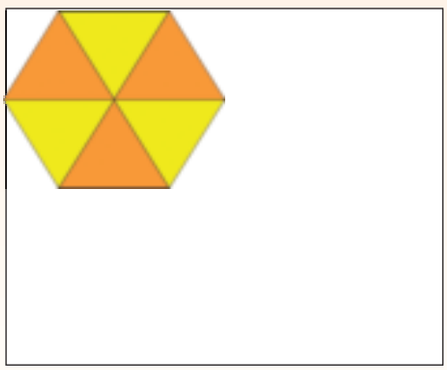


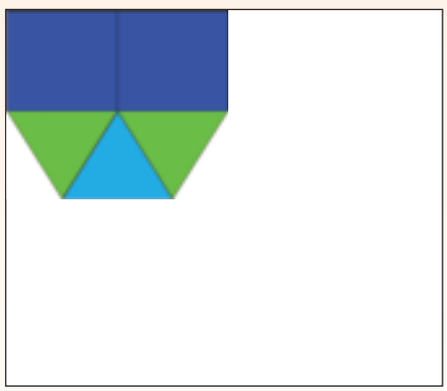
Another word for tessellations is tiling.

1. Tile the rest of the floor with these patterns.







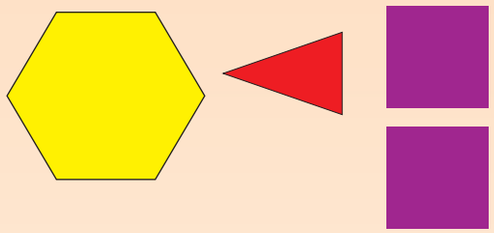




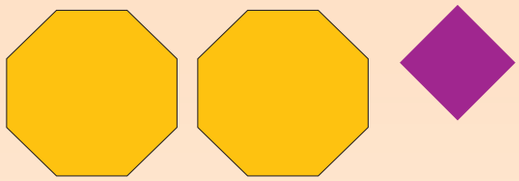
We can also use two or more shapes to make a tessellation pattern.

2. **Show a tessellation pattern using these shapes:**

a.

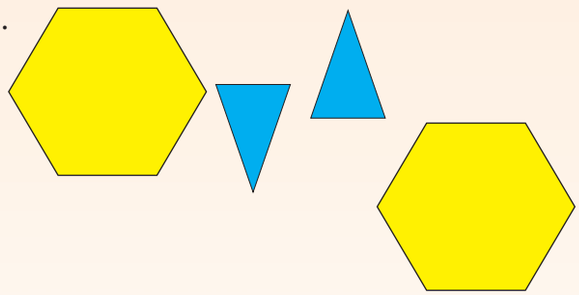


b.

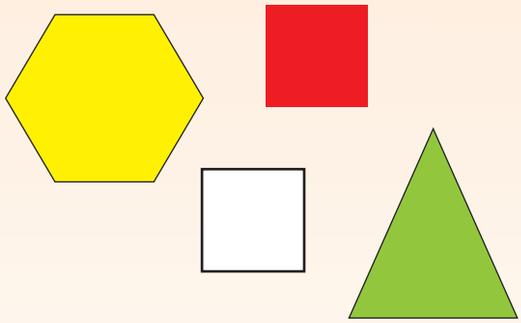


3. **Will these shapes tessellate?**

a.



b.



Tessellation pattern

Create your own tessellation pattern.



Sign:

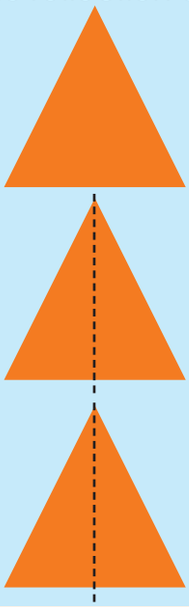
Date:

91 Reflection

What is the difference between reflective symmetry and reflection?

Reflective symmetry

A type of symmetry where one half is the reflection of the other half.



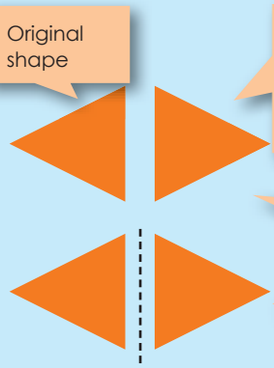
Let us see if this shape has reflective symmetry

We draw a line down the middle of the shape. Is the one half the same as the other?

We can then call this a line of symmetry and this shape has reflective symmetry

Reflection

An image or shape as it would be seen in a mirror or on a smooth lake



Original shape

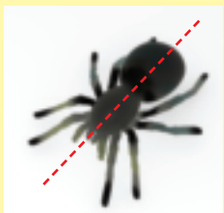
Remember a mirror does not cut you in half.
So reflection shows the whole shape.

Mirror shape

We call this reflection and the line is called a line of reflection.

It is important to remember that the distance from the original shape to the line of reflection must be the same as the distance between the line of reflection and the mirror shape.

1. We get reflective symmetry in nature. Show it by drawing a line of symmetry.

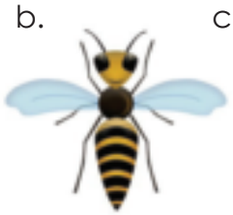


The line of symmetry shows the reflective symmetry on the spider.

a.



b.



c.



2. We also get reflection in nature. Show it by drawing a line of reflection

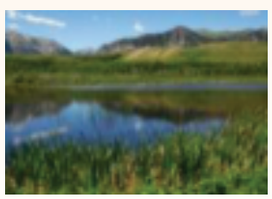


Reflection can be seen in water.

a.



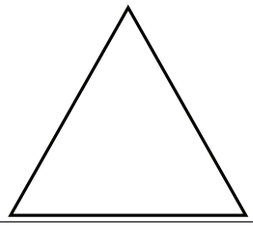
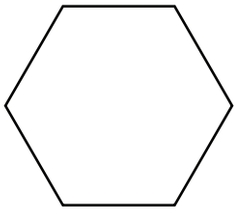
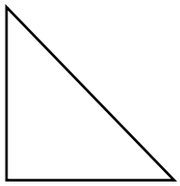
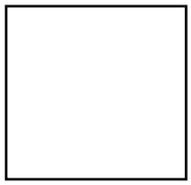
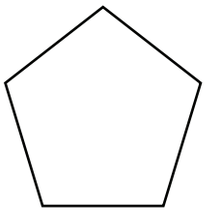
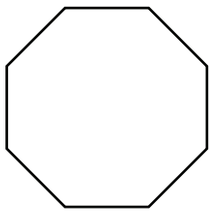
b.



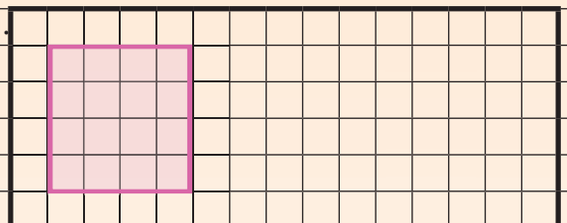
Words we can use to describe reflective symmetry.
mirror, shape, line of symmetry, number of lines of symmetry

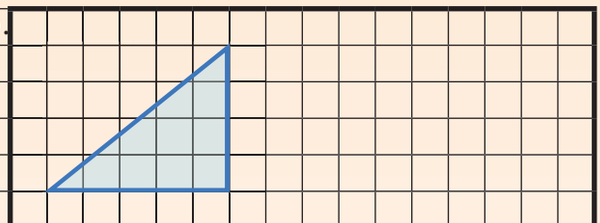
Words we can use to describe reflection.
mirror shape, original shape, line of reflection, lines of symmetry

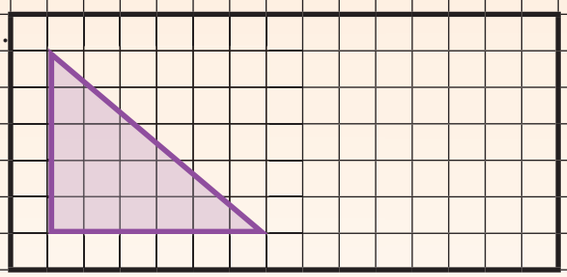
3. **Draw all the lines of symmetry on these shapes.**

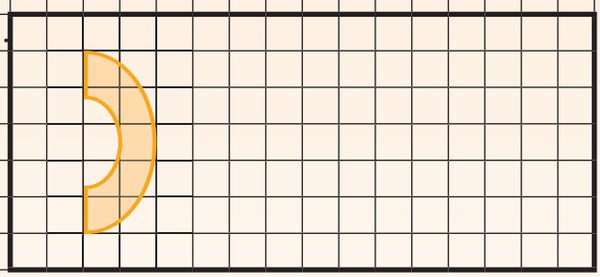
a. 	b. 	c. 
d. 	e. 	f. 

4. **Draw the reflection of the shape and show the line of reflection.**

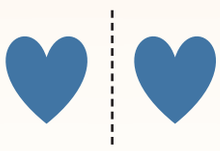
a. 

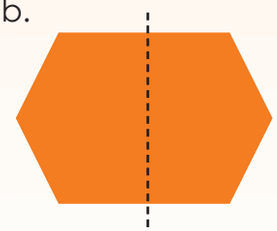
b. 

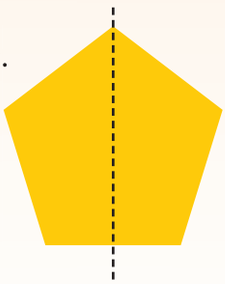
c. 

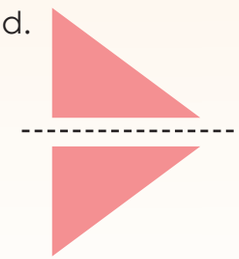
d. 

5. **Describe each picture using your knowledge of reflection and reflective symmetry.**

a. 

b. 

c. 

d. 

I am a designer

Design a tessellation pattern using reflection.

Sign:

Date:

92 Rotation

Rotational symmetry

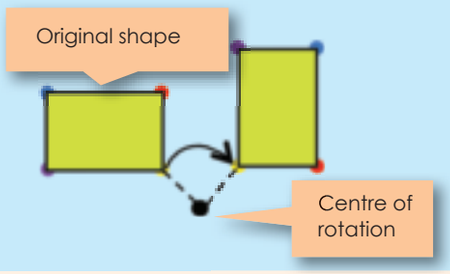
When a shape has rotational symmetry it means the outline of the turning figure matches its original shape. Does this circle have rotational symmetry? Explain.



Why do we say the circle has an order of symmetry of 4?

Rotation

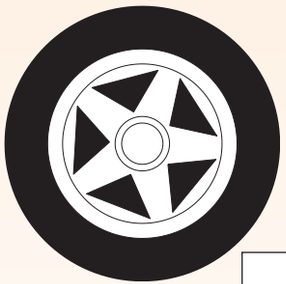
There is a central point that stays fixed and everything else moves around that point in a circle. Look at the drawing and explain it.

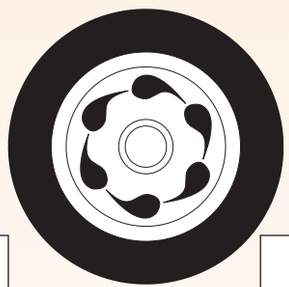


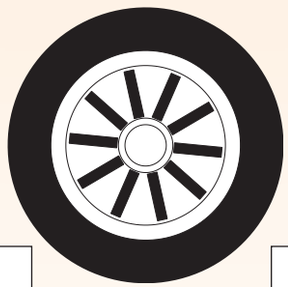
The dots are drawn in different colours so that we can see in which direction the shape has been rotated.

Words to describe rotation
rotated or turned, clockwise, anti-clockwise, point of rotation and distance.

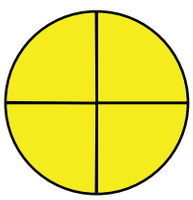
1. How many times will the wheel turn to get back to its original position?

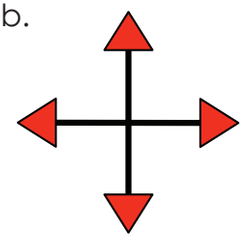
a. 

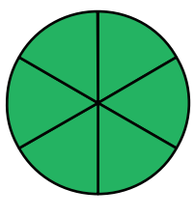
b. 

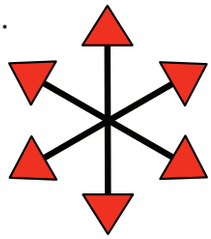
c. 

2. Are these examples of rotational symmetry or rotation.

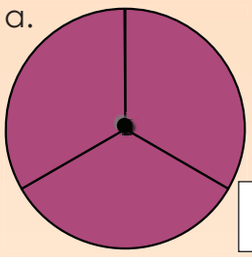
a. 

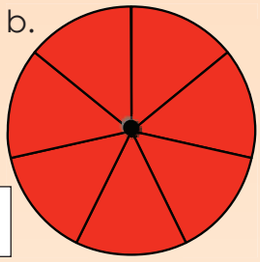
b. 

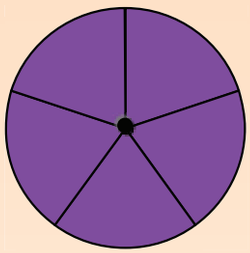
c. 

d. 

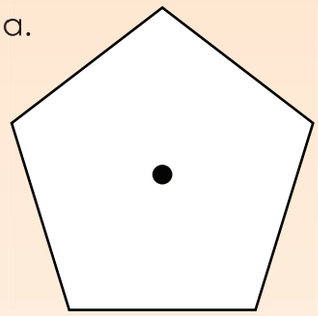
3. How many times will each circle turn to get back to its starting point?

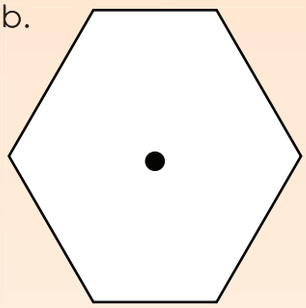
a. 

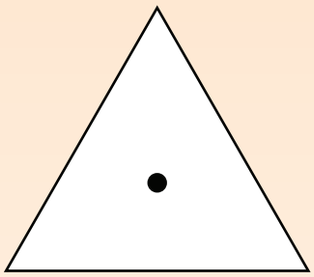
b. 

c. 

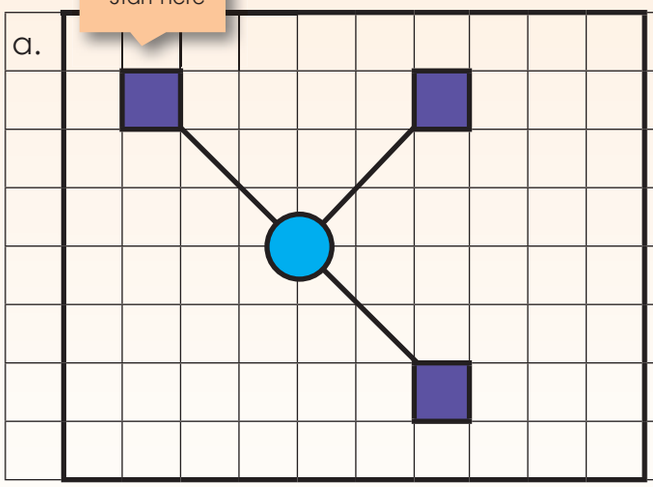
4. Draw the lines of symmetry. How many times will each shape rotate?

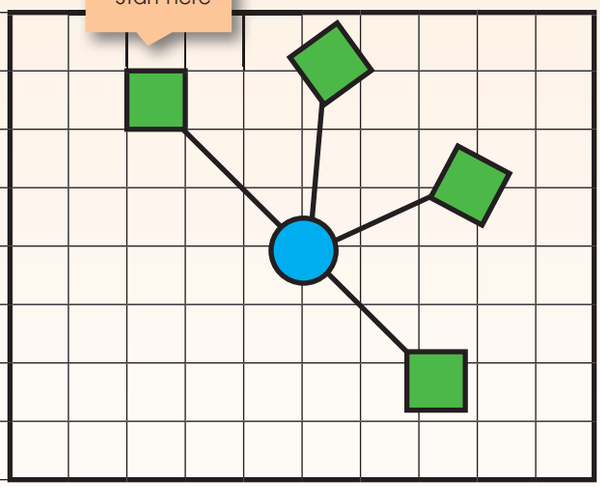
a. 

b. 

c. 

5. Complete the rotation.

a. 

b. 

Drawing rotation

Draw your own example of a shape that has rotational symmetry.

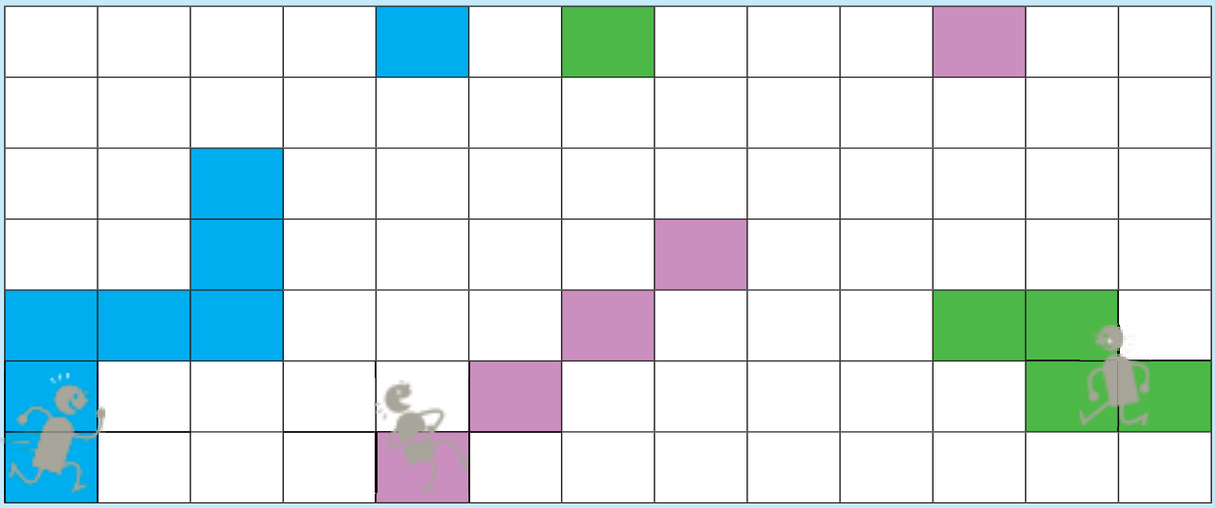
Sign:

Date:

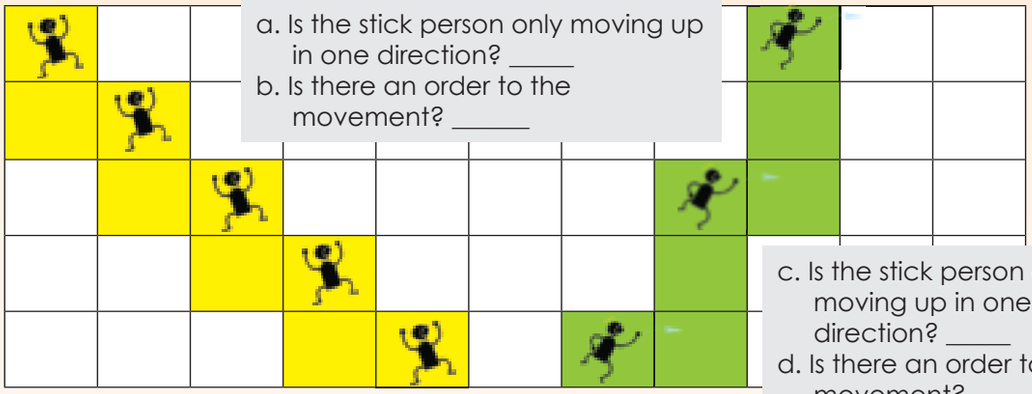
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

93 Translation

Help the stick person to get to the top block by filling in the missing parts of the pattern.



1. Look at the translations and answer the questions.

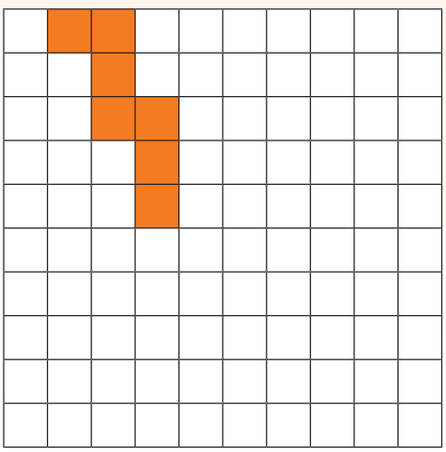


a. Is the stick person only moving up in one direction? _____
b. Is there an order to the movement? _____

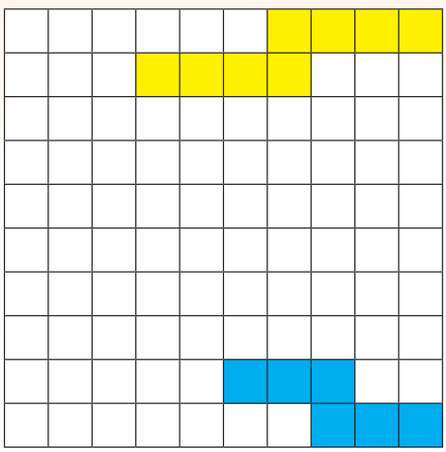
c. Is the stick person only moving up in one direction? _____
d. Is there an order to the movement? _____

2. Complete the patterns.

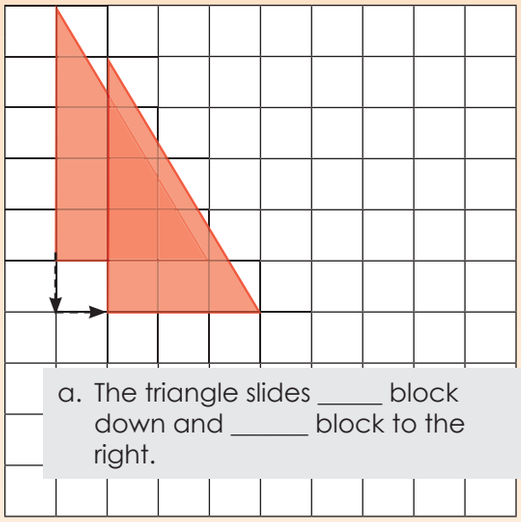
a.



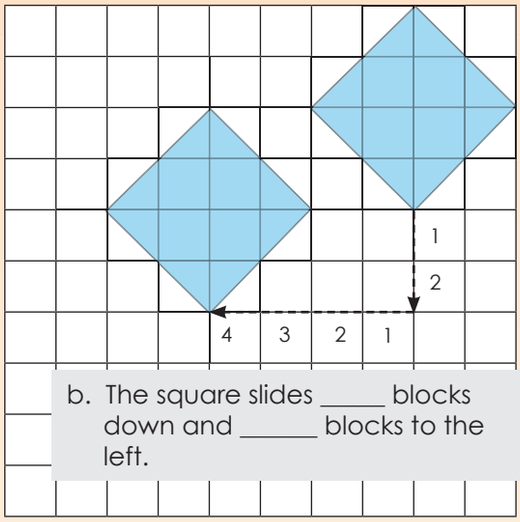
b.



3. Describe the translation. The sentences at the bottom can be given to help them explain what has happened.

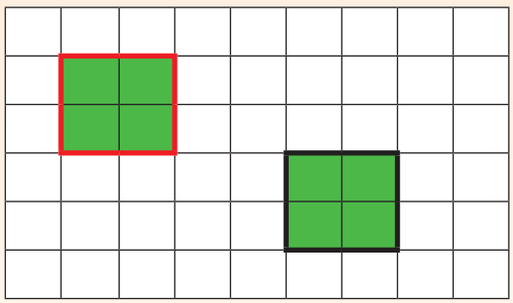


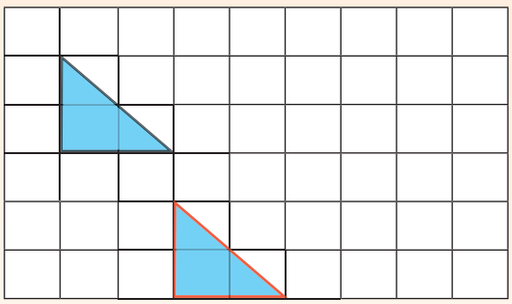
a. The triangle slides _____ block down and _____ block to the right.



b. The square slides _____ blocks down and _____ blocks to the left.

4. Describe what has happened to these translated shapes. The original shape has a red border.





a. How many places down did we slide the green block?

b. How many places to the left did we slide the triangle?

c. Have we changed the shape, size or orientation of the shapes?

d. Can we say that the shapes have been translated?

Moving a star

Draw a star that has been translated three blocks down and four to the left.

Sign:

Date:

94 Temperature and the weather

Look at the pictures. What weather does it show?



1. Look at the calendar. Answer the questions below.

November						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		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			

a. Write down the dates the sun was shining brightly. _____

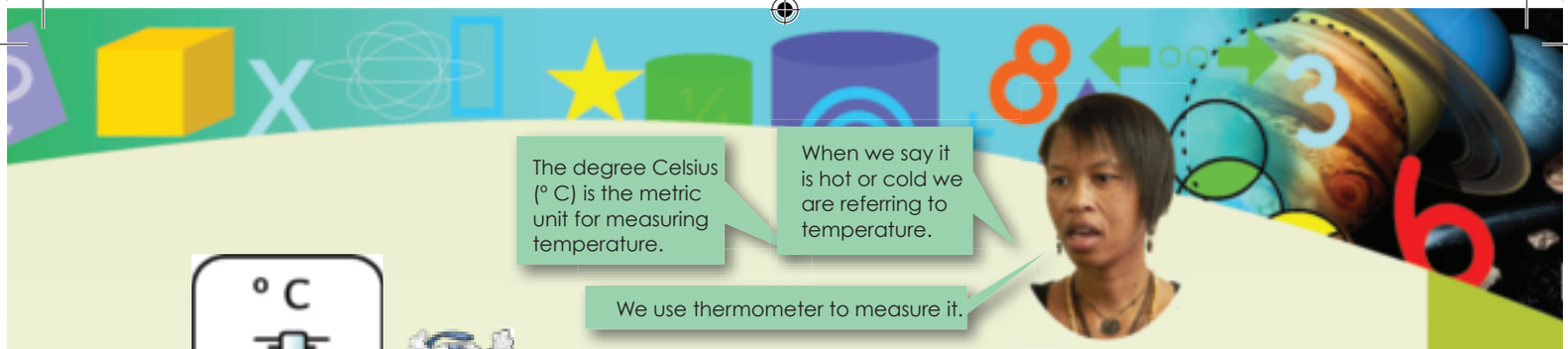
b. Do you think it was hot or cold on those days? Why? _____

c. Write down the dates it was raining. _____

d. Do you think it was hot or cold on those days? Why? _____

e. Write down the dates it was partly cloudy. _____

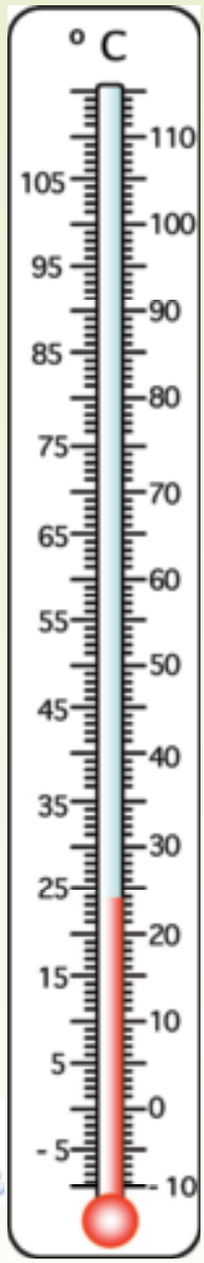
f. Do you think it was hot or cold on those days? Why? _____



The degree Celsius (° C) is the metric unit for measuring temperature.

When we say it is hot or cold we are referring to temperature.

We use thermometer to measure it.





Water boils at 100 ° C

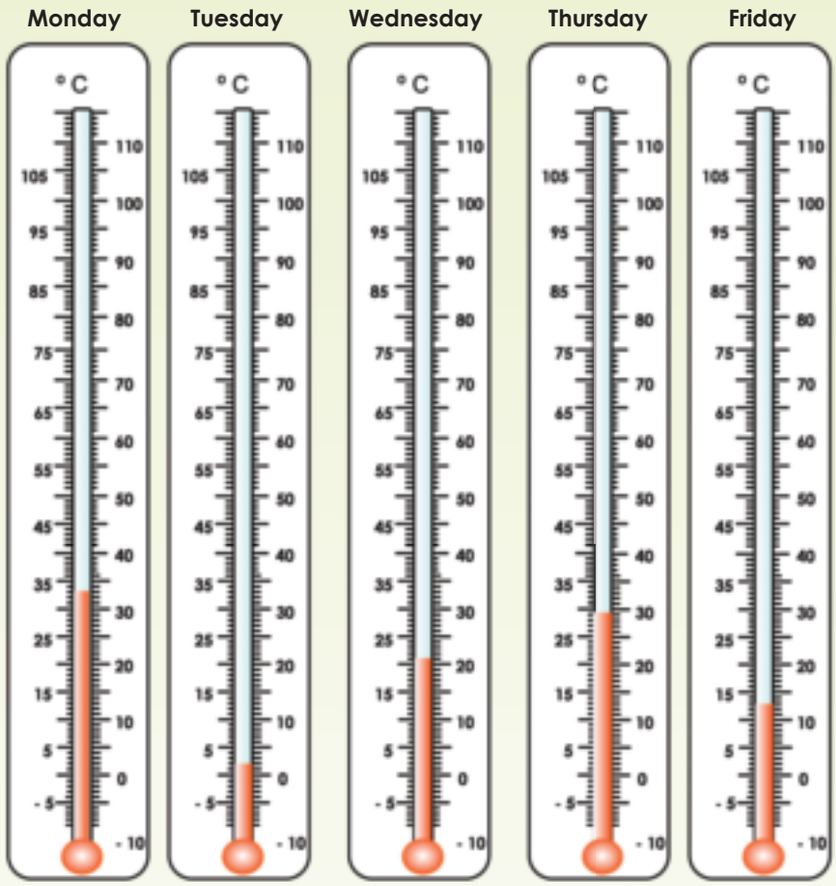
37 ° C
Body temperature

35 ° C
Hot day

15 ° C
Cool day



0 ° C
Water freezes



2. What was the temperature on:

a. Monday: _____

b. Tuesday: _____

c. Wednesday: _____

d. Thursday: _____

e. Friday: _____

Temperatures

Look in a newspaper for tomorrow's expected temperature:

Minimum temperature	Maximum temperature



Sign:

Date:

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

95 Measuring temperature

What did we learn so far? How to read a thermometer.



Sometimes in South Africa when it is very cold in the winter they say it is going to be – 5 ° Celsius.



What does it mean when they say minus?



My mother told me that it is colder than 0 degrees.

1. Read these thermometers. Write down the temperature. Say if it is very cold, cold, cool, warm or very warm.

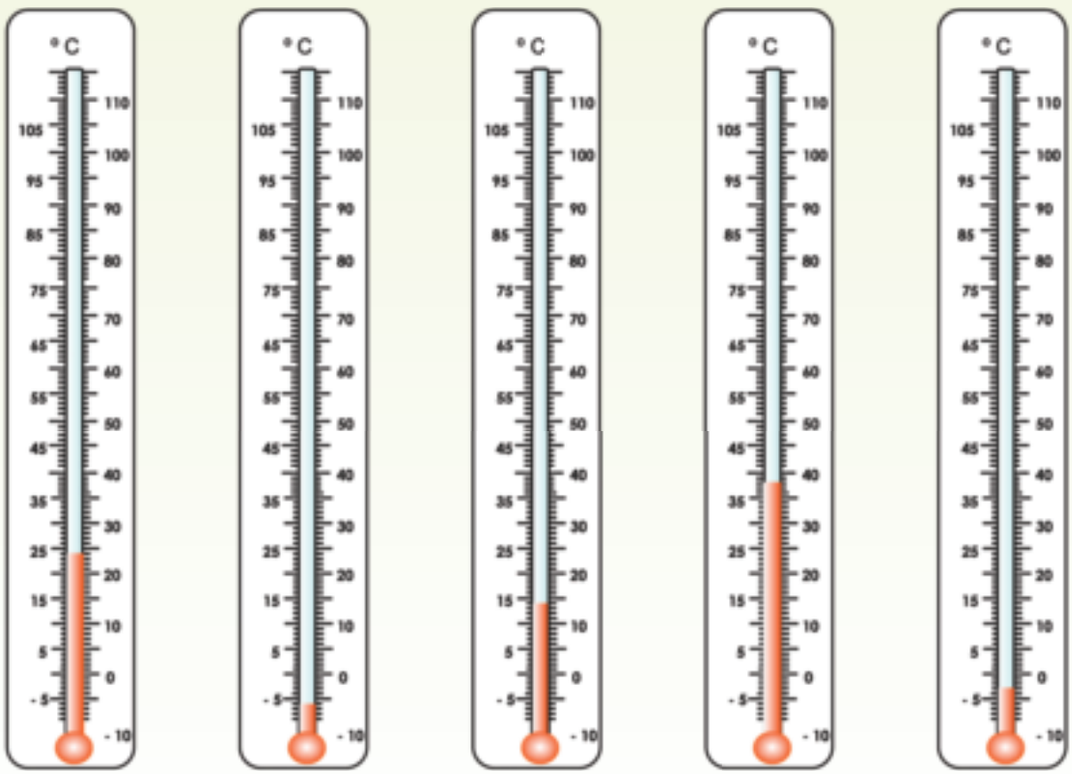
a. _____ _____

b. _____ _____

c. _____ _____

d. _____ _____

e. _____ _____

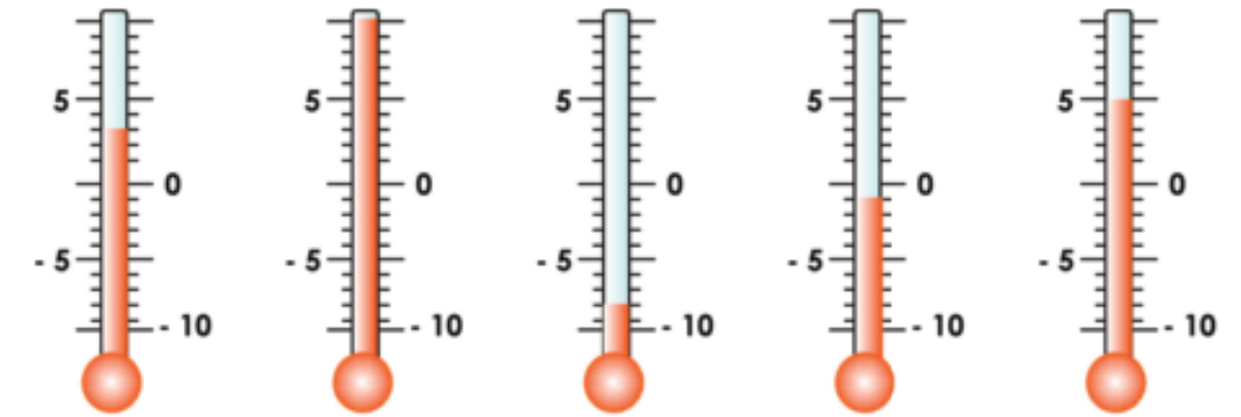


f. What temperature do you like the most? _____

g. Why? _____

2. Write down each temperature.

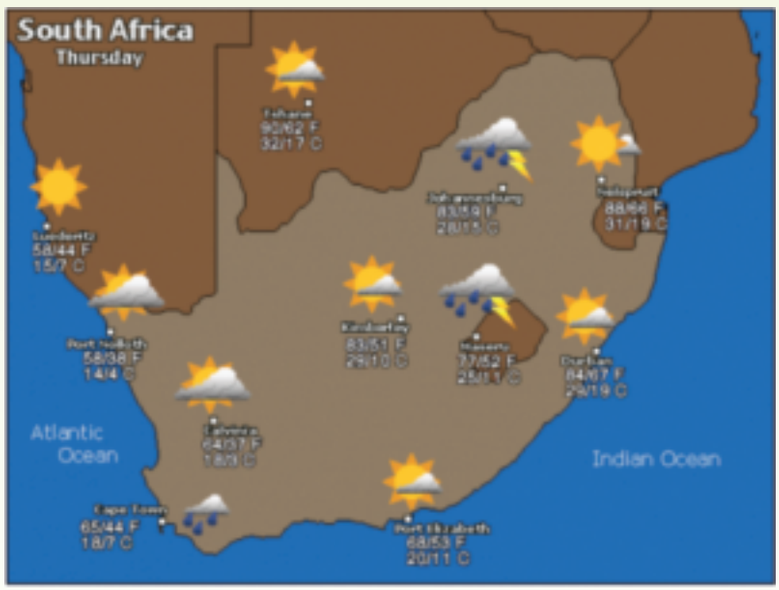
a. _____ b. _____ c. _____ d. _____ e. _____



f. Which temperature is the lowest? _____

g. Which temperature is the highest? _____

3. What will the temperature be for:



a. Johannesburg? _____

b. Nelspruit? _____

c. Kimberley? _____

d. Durban? _____

e. Port Elizabeth? _____

f. Cape Town? _____

g. Calvinia? _____

h. Port Nolloth? _____

i. Which town or city is the closest to you? _____

What to wear

You can also make a drawing.



Cut pictures from a magazine showing what people will wear in this weather.

24 °C

-2 °C

Sign:

Date:

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

Data and pictographs



1. Complete the frequency table on electronic equipment. Children in grade 5 have:

	Tally	Frequency
Cell phone		
Computers		
iPod		
Laptop		

2. Use the table above and draw a pictograph.

Cell phones = 5	Computers = 5	iPods = 5	Laptops = 5

3. Use the pictograph and draw a bar graph.

4. Answer the following questions:

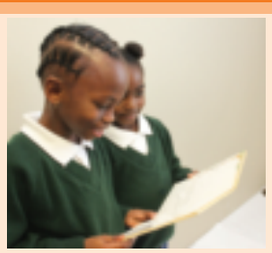
a. How many of the children in grade five have:

- Cell phones? _____
- Computers? _____
- Laptops? _____
- iPods? _____

b. Which electronic equipment is the most popular in grade 5? _____

c. Which electronic equipment is the least popular in grade 5? _____

Pamphlet search …



Find a promotional leaflet from a computer retail store. Make a list of the products.

What type of product is the most common on the leaflet?

Sign:

Date:

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

97a Pictographs and bar graphs

Our restaurant strives to give you – our valued customer – the best in quality, value and service. A few seconds of your time to rate our efforts will help us to achieve even better results.

On the right are the customer satisfaction survey results taken over a period of 6 months.

	How would you rate our service?			
	Excellent	**Average**	**Fair**	**Poor**
Welcome	150	190	60	10
Service	180	205	25	10
Food Quality	210	190	10	10
Atmosphere	180	220	15	5



1. Each represents 10 people. Represent these numbers using a symbol like this symbol.

a. 50

b. 100

c. 80

d. 140

2. Draw pictographs to represent the survey results on the four categories of service. Each symbol should represent 10 people.

Welcome



Term 3

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

Service

Food quality

Atmosphere

Good service?

Find out if the service of a local restaurant is good or not so good.



Sign:

Date:

continued

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

97b Pictographs and bar graphs continued

3. You are going to find out what children in your grade like to drink at break. This is a list of what drink each child prefers. Study it and then answer the following question.







juice	water	milk	milk	juice	water
water	milk	milk	juice	water	juice
milk	milk	milk	milk	juice	water
juice	water	milk	milk	juice	water
water	milk	milk	juice	water	juice
milk	milk	milk	milk	juice	water
juice	juice	juice	water	water	water
milk	milk	milk	juice	water	milk
milk	milk	milk	milk	juice	water
juice	juice	juice	water	water	water
milk	milk	milk	juice	water	milk
juice	juice	juice	water	water	water
juice	juice	juice	water	water	water

a. What data are you going to collect?

b. How will you do it?

c. How will you sort (organise) your data?

4. Draw a pictograph for your data.

5. Draw a bar graph for your data.

Sign:

Date:

continued ☛

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

97c Pictographs and bar graphs continued

6. This is a record of how many bags of waste were collected at a school over a month. Study it and then draw a pictograph using the information. First draw your own symbol which represents five bags.

Week	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	15 bags	25 bags	10 bags	20 bags	5 bags
Week 2	10 bags	15 bags	20 bags	10 bags	5 bags
Week 3	20 bags	15 bags	5 bags	5 bags	10 bags
Week 4	5 bags	5 bags	15 bags	15 bags	5 bags
Week 5	5 bags	10 bags	5 bags	5 bags	5 bags

5 bags

Week 1	Week 2	Week 3	Week 4	Week 5

7. Use the pictograph to draw a bar graph.

8. Answer the questions below.

a. Which week did they have the most bags of waste?

b. Which week did they have the least bags of waste?

c. Compare week 1 to 5. What do you notice?

d. What do you think happened with the waste at this school? Use words such as reduce, less, more, recycle and reuse.

Waste management

How many bags or dustbins does your class fill per day?

Sign:

Date:

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

98 Data collection

Do you like to score in sport? Why do we need to take part in sport?





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

How many times can you bounce a ball in one minute?

Name	Bounces in one minute

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

3. In groups of six you each will kick 5 goals. Your teacher will time you to see who can kick 5 goals in the shortest period. Organise and record your data.



Name	Time

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

Fitness

One of your friends told you that children in your school that exercise regularly are doing better in tests than children who do not exercise.

How do you think she knows this?



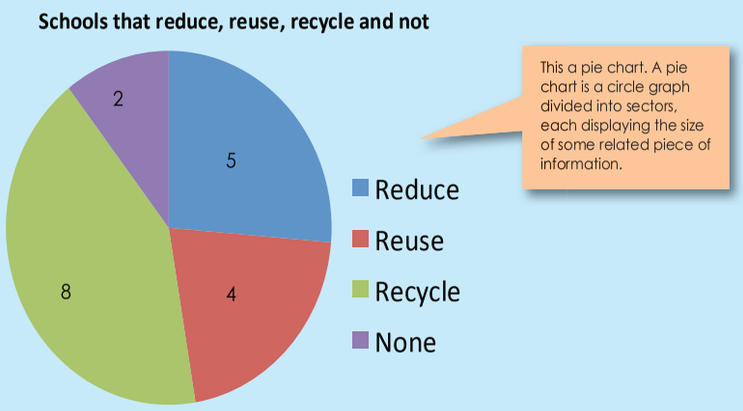
Sign:

Date:

99 Pie charts

What is this pie chart telling us.

Schools that reduce, reuse, recycle and not



1. After a survey was done. The pie chart above was drawn.

a. How many schools took part in this survey?

b. How do you know that?

c. How many schools are?

i) reducing

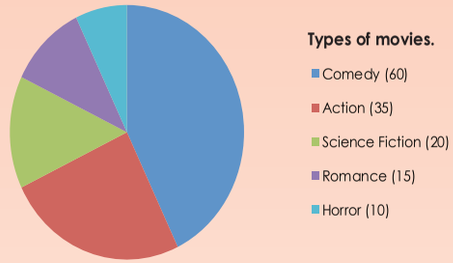
ii) re-using

iii) recycling

iv) not reducing, re-using or recycling

d. Why do you think more schools recycle than re-use?

2. Grade 5 learners were asked what their favourite type of movie is. This was the result. Answer the questions below.



a. What data was collected?

b. How was it collected?

c. How many learners like comedy?

d. How many learners like romance?

e. How many learners like science fiction?

f. Who would want to collect this information?

g. If we wanted to treat the learners on the last day of school, which two movies would we hire? Why?

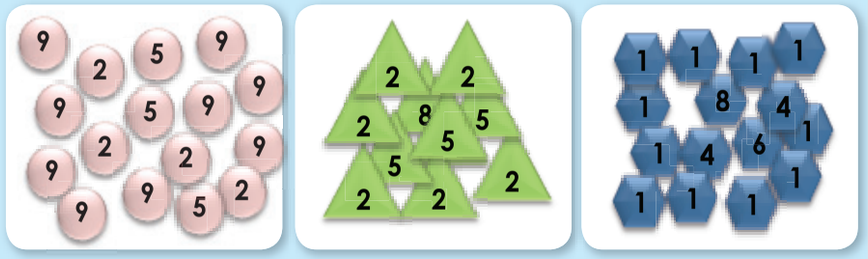
Write a paragraph on the pie cart above.

Sign:

Date:

100 Finding the mode of ungrouped numerical data sets

Look at the numbers in the blocks. Which number appears most often?



The number that appears most often is called the **mode**.

1. We will guide you to complete this example:
Here are the different amounts of paper that the school collected to recycle (in kilograms).

kg	22	21	22	21	20	19	22	23	20

a. To identify the mode, it is easier when the kilograms are put in order first. We started to put the kilograms in order. Complete the rest.

kg	19	20							

b. Mode is the most commonly occurring _____ in a set of numbers.

Let us summarise:
Step 1: Put the numbers in order.
Step 2: Look for the number that occurs most often., e.g. 22 kg occurs the most.
The mode is 22 kg.

2. Use the tables to help answer the questions.

a. Amount of glass collected.

Week 1	Week 2	Week 3	Week 4	Week 5
5 kg	4 kg	5 kg	6 kg	5 kg

i. Rearrange the results: _____

ii. The mode is _____



b. Amount of plastic collected.

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
8 kg	7 kg	6 kg	4 kg	7 kg	7 kg	5 kg

i. Rearrange the results: _____

ii. The mode is _____

c. Amount of metal collected.

Week 1	Week 2	Week 3	Week 4	Week 5
5 kg	6 kg	6 kg	5 kg	5 kg

i. Rearrange the results: _____

ii. The mode is _____

3. Here are the heights of some of the recycling bins.
135 cm, 145 cm, 125 cm, 135 cm, 145 cm, 145 cm, 125 cm, 120 cm, 120 cm, 130 cm and 115 cm.

i. Rearrange the results: _____

ii. The mode is _____

4. Here is the total amount of paper collected in seven weeks.
135 cm, 145 cm, 125 cm, 135 cm, 145 cm, 145 cm, 125 cm, 120 cm, 120 cm, 130 cm and 115 cm.

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
7 kg	6 kg	7 kg	6 kg	6 kg	7 kg	6 kg

i. Rearrange the results: _____

ii. The mode is _____

Total waste

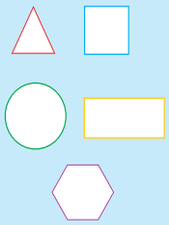
Go back to Question 2 and work out how many kilograms of each material was collected.

Sign:

Date:

101 Number patterns

Describe 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. 60, 70, 80, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

b. 250, 300, 350, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

c. 266, 268, 270, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

d. 149, 152, 155, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

e. 366, 391, 416, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

f. 133, 138, 143, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

2. Complete the pattern.

a. 633, 630, 627, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

b. 925, 900, 875, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

c. 405, 400, 395, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

d. 647, 637, 627, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

e. 895, 845, 795, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

f. 441, 439, 437, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

3. Fill in the missing numbers.

a. 84, 91, 98, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

b. 195, 200, 205, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

c. 320, 324, 328, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

d. 199, 207, 215, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

e. 415, 421, 427, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

f. 316, 341, 366, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

g. 521, 531, 541, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

h. 188, 191, 194, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

4. Fill in the missing numbers.

a. 240, 234, 228, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

b. 948, 938, 928, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

c. 592, 584, 576, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

d. 543, 536, 529, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

e. 621, 616, 611, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

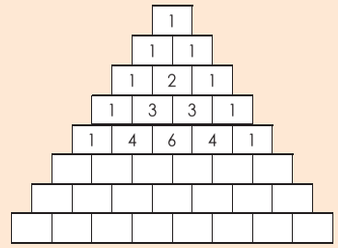
f. 522, 497, 472, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

g. 444, 441, 438, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

h. 633, 629, 625, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___

Pattern fun

Complete the pattern.

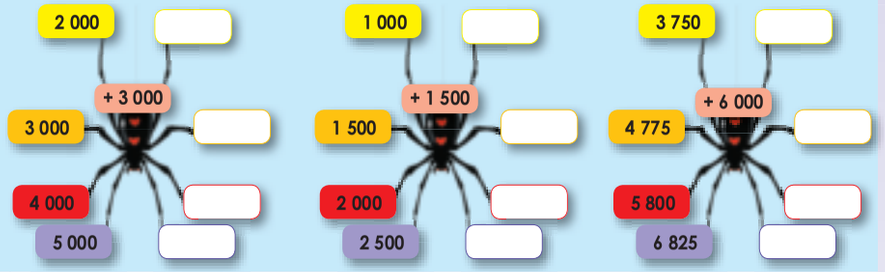


Sign:

Date:

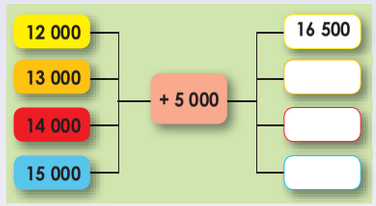
102 More number patterns

What is the answer?

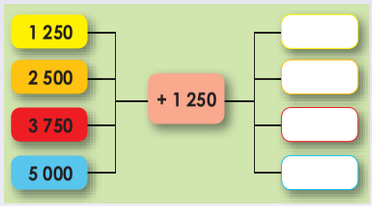


1. Complete the flow diagrams.

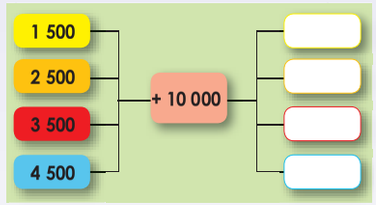
a.



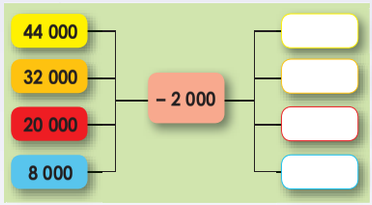
b.



c.



d.



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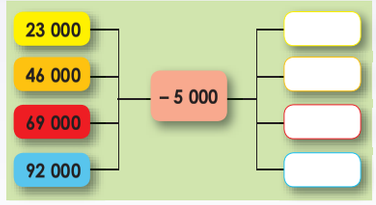

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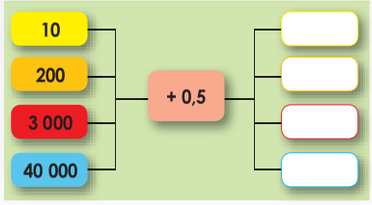

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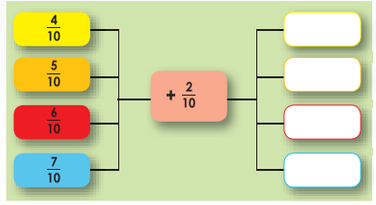
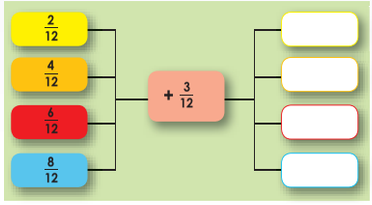
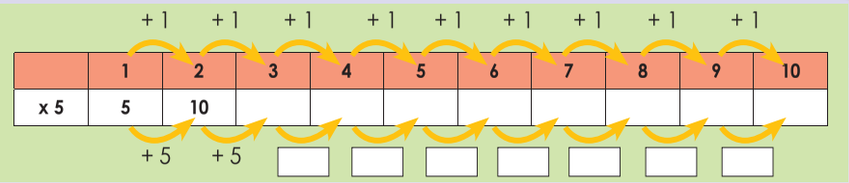


h.



2. Complete the table.

a.



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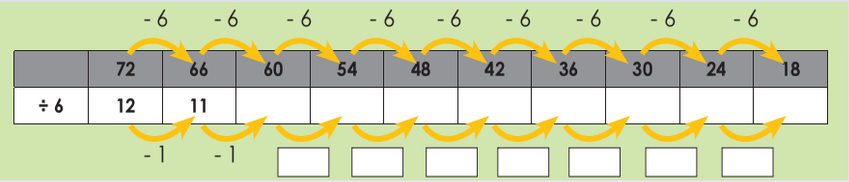


c.

	270	255	240	225	210	195	180	165	150	135
÷ 15										

d.

	500	475	450	425	400	375	350	325	300	275
÷ 25										

e.

	3	4	5	6	7	8	9	10	11	12
x 12										

f.

	165	154	143	132	121	110	99	88	77	66
÷ 11										

g.

	1	2	3	4	5	6	7	8	9	10
x 30										

Create a table .

Create your own tables like the ones above.

X										

÷										

Sign:

Date:

103a Multiplication: 3-digit by 2-digit and 4-digit by 1-digit

Term 3

What number comes next?

4	8	16	32	?
40	80	160	320	?
400	800	1600	3200	?



Try this!

3	9	27	81	?
30	90	270	810	?
300	900	2700	8100	?

1. Complete the table below.

Number	x 100	x 200	x 300	x 400	x 500	x 600	x 700	x 800	x 900
15									
20									
25									
30									
50									

2. Use both methods to do the multiplication below.

Examples:

Example 1:

369 x 68

= (300 x 60) + (60 x 60) + (9 x 60) + (300 x 8) + (60 x 8) + (9 x 8)

= 18 000 + 3 600 + 540 + 2 400 + 480 + 72

= 10 000 + 8 000 + 3 000 + 600 + 500 + 40 + 2 000 + 400 + 400 + 80 + 70 + 2

= 10 000 + 13 000 + 1 900 + 190 + 2

= 10 000 + 10 000 + 3 000 + 1 000 + 900 + 100 + 90 + 2

= 20 000 + 4 000 + 1 000 + 90 + 2

= 20 000 + 5 000 + 90 + 2

= 25 092

Example 2:

		3	6	9	
x			6	8	
		7	2		(9 x 8)
	4	8	0		(60 x 8)
2	4	0	0		(300 x 8)
	5	4	0		(9 x 60)
3	6	0	0		(60 x 60)
1	8	0	0	0	(300 x 60)
2	5	0	9	2	

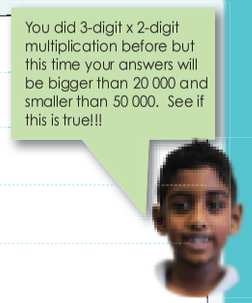
a. 287 x 78 =

b. 387 x 66 =

Continue on an extra sheet of paper

c. 984 x 35 =

d. 498 x 53 =



Continue on an extra sheet of paper

e. 623 x 44 =

Continue on an extra sheet of paper

Sign:

Date:

continued

103b Multiplication: 3-digit by 2-digit and 4-digit by 1-digit continued

3. Use both methods to do the multiplications below.

Examples:

Example 1:

5 649 x 6
= (5 000 x 6) + (600 x 6) + (40 x 6) + (9 x 6)
= 30 000 + 3 600 + 240 + 54
= 30 000 + 3 000 + 600 + 200 + 40 + 50 + 4
= 30 000 + 3 000 + 800 + 90 + 4
= 33 894

Example 2:

	5	6	4	9	
x				6	
			5	4	(9 x 6)
		2	4	0	(40 x 6)
	3	6	0	0	(600 x 6)
3	0	0	0	0	(5 000 x 6)
3	3	8	9	4	

a. 5 693 x 6 =

Continue on an extra sheet of paper

b. 4 867 x 5 =

Continue on an extra sheet of paper

c. 3 989 x 9 =

Continue on an extra sheet of paper

d. 6 742 x 3 =

Continue on an extra sheet of paper

e. 9 658 x 4 =

Continue on an extra sheet of paper

4. Solve the problems.

a. There are 7 grades in our school. In each grade there are 246 learners. How many learners are there altogether in our school?

Continue on an extra sheet of paper

b. There are 188 bags with 35 oranges in each bag. How many oranges are there in total?

Continue on an extra sheet of paper

How quick can you calculate this?

4 x 3 x 5 x 4 x 3 x 5 x 4 = ____

7 x 3 x 5 x 7 x 3 x 5 x 7 = ____

Sign:

Date:

104 More multiplication: 3-digit by 2-digit and 4-digit by 1-digit

What number comes next? Try this!

5	50	500	5 000	?
3	36	432	5184	?
1	15	225	3 375	?
11	99	891	8019	?

1. Complete the table below:

Number	x 100	x 300	x 400	x 500	x 800
15	1 500				
25					
40					
60					
75					

2. Calculate the following:

a. 684 x 47 =

Continue on an extra sheet of paper

b. 426 x 84 =

Continue on an extra sheet of paper

c. 5 123 x 9 =

Continue on an extra sheet of paper

d. 9427 x 8 =

Continue on an extra sheet of paper

3. Solve the problems.

a. 378 children attended the sport event. Each spent R35. How much money did they spend altogether?

Continue on an extra sheet of paper

b. The TV costs R7 899. The shop sold 8 TVs. How much money did they get for all the TVs?

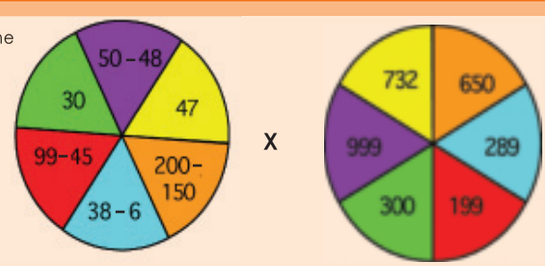
Continue on an extra sheet of paper

c. 9 999 people each had1 litre of milk each day for a week. How much milk did they drink altogether?

Continue on an extra sheet of paper

Spinning numbers

Multiply the numbers with the same colour.



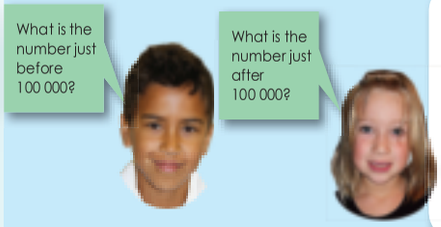
Sign:

Date:

Term 3

Numbers 0 – 1 00 000

How much is 100 000?





How many R200 notes do you need to make R100 000?

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

Take each number and round it off to the nearest 5, 10, 100 and a 1 000.

1. Say if the following is true or false:

a. There are 500 R200 notes in R100 000. _____

b. There are 500 R100 notes in R100 000. _____

c. There are 1 000 R100 notes in R100 000. _____

d. There are 100 000 millilitres in 10 000 litre. _____

e. There are 100 000 millilitres in 100 litres. _____

2. Complete the following:

a. 100 000 + 30 000 + 1 000 + 200 + 90 + 6 = _____

b. 100 000 + 90 000 + 5 000 + 600 + 7 = _____

c. 100 000 + 40 000 + 8 = _____

d. 100 000 + 9 = _____

e. 10 + 40 000 + 7 000 + 100 000 + 6 = _____

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

a. 1<u>8</u>3 5<u>8</u>6 = 80 000 and 80

b. <u>1</u>23 21<u>7</u> = _____

c. <u>1</u>79 1<u>6</u>2 = _____

d. 13<u>9</u> 00<u>7</u> = _____

e. <u>1</u>99 <u>9</u>99 = _____

4. Circle the number that is:

a. 40 000 more than 54 562: 94 652, 14 562, 94 562, 84 562

b. 3 000 more than 42 985: 45 895, 45 985, 37 985, 72 985

c. 900 more than 95 644: 96 900, 81 644, 84 644, 96 544

d. 60 000 more than 15 487: 21 487, 75 487, 55 487, 75 874

e. 100 000 more than 79 999: 179 999, 89 999, 69 999, 88 999

5. Use any of these digits to make five different 5-digit numbers smaller than 99 999 but bigger than 50 000.

a. _____

_____

_____

_____

_____



6. Answer <, > or =

a. 194 578 _____ 184 587

b. 14 680 _____ 15 680

c. 10 900 _____ 10 090

d. 15 303 _____ 15 003

e. 94 999 _____ 94 909

7. Write the following in numbers:

a. One hundred and sixty five thousand three hundred and twenty one.

_____

b. One hundred thousand two hundred and fifteen.

_____

8. Write the following in words:

a. 123 633 _____

b. 105 128 _____

c. 62 805 _____

d. 80 004 _____

9. Say if the numbers in question 8 are odd or even.

_____

Up to 100 000



Find 10 numbers in a newspaper that are bigger than 10 000 but smaller than 100 000.

How many numbers are closer to 10 000 than to 100 000?

What do the numbers tell us?

Take each number and round it off to the nearest 5, 10, 100 and a 1 000.

Sign:

Date:

106a Addition: 5-digit numbers

Revise **place value** and **expanded notation**.

Give the answer for:

90 000 + 7 000 + 800 + 3 =	
50 000 + 9 000 + 400 + 1 =	
30 000 + 2 000 + 60 + 2 =	
80 000 + 6 000 + 700 + 90 =	
40 000 + 1 000 + 5 =	

Write in expanded notation:

90 120	
75 300	
89 060	
34 000	
50 640	

1. Give the answers for the following:

Example: 90 000 + 7 000 + 800 + 3 = 97 803

a. 90 000 + 5 000 + 800 + 20 + 5 = _____

b. 70 000 + 1 000 + 500 + 80 + 9 = _____

c. 30 000 + 700 + 10 + 4 = _____

d. 60 000 + 90 + 1 = _____

e. 40 000 + 9 = _____

2. Write the following in expanded notation.

Example: 90 120 = 90 000 + 100 + 20

a. 34 248 _____

b. 52 505 _____

c. 41 094 _____

d. 90 001 _____

e. 30 130 _____

3. Calculate and write your answers in expanded notation (in units or tens or hundreds or thousands or ten thousands).

8 + 7	80 + 70	800 + 700	8 000 + 7 000	80 000 + 70 000
= 15 = 10 + 5	= 150 = 100 + 50	= 1 500 = 1 000 + 500	= 15 000 = 10 000 + 5 000	= 150 000 = 100 000 + 50 000

a. 3 + 9 =

b. 6 000 + 7 000 =

c. 800 + 600 =

d. 40 + 80 =

e. 70 000 + 80 000 =

f. 9 + 5 =

4. Calculate the following using the method below.

Example:

56 832	=	50 000 + 6 000 + 800 + 30 + 2
+ 9 396	=	9 000 + 300 + 90 + 6
+ 33 254	=	30 000 + 3 000 + 200 + 50 + 4
Total	=	80 000 + 18 000 + 1 300 + 170 + 12
	=	80 000 + 10 000 + 9 000 + 400 + 80 + 2
99 482	=	99 482

a. 74 523 + 3 498 + 48 983 =

b. 26 665 + 6 751 + 38 894 =

5. Do the following on an extra sheet of paper. A farmer sells fruit to several stores in his city. He sold 13 789 pears and 35 678 oranges in one month. How much fruit did he sell altogether?

Sign:

Date:

continued ☛

106b Addition: 5-digit numbers continued

6. Calculate the following using the method below.

Example:

$$\begin{array}{r} {\scriptstyle 1\ \ } \\ 6\ 8 \\ +\ 2\ 3 \\ \hline 9\ 1 \end{array}$$

a. 74 + 18 =

b. 54 + 39 =

c. 65 + 28 =

d. 39 + 45 =

e. 42 + 39 =

f. 53 + 49 =

7. Calculate the following using the method below.

Example:

$$\begin{array}{r} {\scriptstyle \ \ \ \ 1} \\ 4\ 3\ 2\ 6\ 5 \\ +\ \ 4\ 5\ 2\ 7 \\ \hline 4\ 7\ 7\ 9\ 2 \end{array}$$

a. 93 254 + 3 429 =

b. 73 236 + 6 537 =

c. 78 224 + 1 569 =

d. 83 147 + 5 635 =

e. 54 306 + 4 576 =

f. 96 584 + 2 308 =

8. Calculate the following using the method below.

Example:

$$\begin{array}{r} {\scriptstyle \ \ 1\ 1} \\ 6\ 5\ 4\ 3\ 2 \\ +\ \ 2\ 3\ 8\ 9 \\ \hline 6\ 7\ 8\ 2\ 1 \end{array}$$

a. 56 636 + 2 198 =

b. 45 883 + 2 098 =

c. 41 892 + 6 039 =

d. 52 127 + 5 395 =

e. 42 422 + 5 379 =

f. 47 331 + 1 279 =

9. Calculate the following using the method below.

Example:

$$\begin{array}{r} {\scriptstyle 1\ 1\ 1} \\ 8\ 7\ 5\ 9\ 6 \\ +\ \ 9\ 4\ 1\ 1 \\ \hline 9\ 7\ 0\ 0\ 7 \end{array}$$

a. 43 356 + 32 867 =

b. 25 626 + 52 675 =

c. 76 734 + 12 587 =

d. 58 272 + 30 849 =

e. 63 789 + 24 654 =

f. 77 932 + 10 598 =

Farm costs

My uncle bought a second-hand tractor for R64 375 and a plough for R15 430. How much did he pay for the two items?

Sign:

Date:

107 Subtraction: 5-digit numbers

Term 4

How fast can you answer the following:

(90 000 + 3 000 + 200 + 50 + 4) – 2 =	
(80 000 + 3 000 + 100 + 40 + 7) – 30 =	
(30 000 + 8 000 + 200 + 80 + 3) – 100 =	
(70 000 + 3 000 + 200 + 30 + 6) – 1 000 =	
(50 000 + 4 000 + 300 + 6) – 10 000 =	



73 254 ✖
80 147 ✖
28 283 ✖
73 235 ✖
53 306 ✖

1. Give an answer for the following:

Example: (90 000 + 3 000 + 200 + 50 + 4) – (30 + 2) = 93 222

a. (40 000 + 9 000 + 300 + 60 + 5) – (20 + 1) = _____
b. (50 000 + 8 000 + 30 + 6) – (4 000 + 20) = _____
c. (90 000 + 800 + 50 + 7) – (600 + 10 + 5) = _____
d. (60 000 + 7 000 + 100 + 8) – (10 000 + 2 000 + 100 + 6)= _____
e. (80 000 + 5 000 + 700 + 40) – (10 000 + 5 000 + 200 + 10) = _____

2. Write the subtraction in expanded notation and calculate the answer.

Example: 84 434 – 213 = (80 000 + 4 000 + 400 + 30 + 4) – (200 + 10 + 3) = 84 221

a. 96 653 – 312 = _____
b. 85 953 – 944 = _____
c. 74 009 – 13 211 = _____
d. 43 907 – 42 908 = _____
e. 60 080 – 31 345 = _____

3. Calculate the following using the examples below to guide you. You will need extra paper to complete this.

Example:

36 – 9	**536 – 69**	**4 536 – 769**
= (30 + 6) – 9	= (500 + 30 + 6) – (60 + 9)	= (4 000 + 500 + 30 + 6) – (700 + 60 + 9)
= (20 + 16) – 9	= (400 + **130** + 6) – (60 + 9)	= (3 000 + **1 500** + 30 + 6) – (700 + 60 + 9)
= 20 + 7	= (400 + **120** + **16**) – (60 + 9)	= (3 000 + **1 400** + **130** + 6) – (700 + 60 + 9)
= 27	= 400 + 60 + 7	= (3 000 + **1 400** + **120** + **16**) – (700 + 60 + 9)
	= 467	= 3 000 + 700 + 60 + 7
		= 3 767

a. 95 – 9 = b. 4 715 – 956 = c. 765 – 96 =

d. 9 684 – 796 = e. 854 – 97 = f. 75 – 8 =

g. 856 – 87 = h. 5 738 – 859 = i. 6 824 – 975 =

4. Complete the following:

Example:

752 = 600 + 140 + 12

8 3 7 5 2	= 80 000 + 3 000 + **600** + **140** + **12**	
– 3 2 5 7 5	= 30 000 + 2 000 + 500 + 70 + 5	
Total	= 50 000 + 1 000 + 100 + 70 + 7	
	= 51 177	

a. 58 476 – 29 697 = b. 71 432 – 30 675 =

Cycling a long way!

My brother cycled 63 575 m. His friend cycled 36 589 m. How much farther did my brother cycle?

Sign:

Date:

108 Subtraction using the vertical column method

Revise the following.

	7	10
	8	6
–	3	8
	4	8

- Subtract the **units**.
- Note how we break down the **80** into **70** + **10**. We then add the **10** to the **6**; that gives us 16.
- Now we can subtract the units.
- Subtract the tens.

Take note that when saying 'carry over 10' or "borrow 10" it does not help to understand place value. Rather say 'We write the 10 at the top of the units column'.

1. Calculate the following using the method below.

a. 896 – 507 =

b. 684 – 267 =

c. 785 – 567 =

d. 758 – 439 =

e. 676 – 359 =

f. 946 – 128 =

g. 847 – 328 =

h. 757 – 238 =

i. 786 – 459 =

2. Calculate the following using the method below.

Example:

	6	2	5	4	7
–	3	1	4	2	3
	3	1	1	2	4

a. 93 142 – 52 031 =

b. 82 531 – 51 320 =

c. 71 313 – 30 102 =

d. 75 407 – 23 203 =

e. 94 524 – 63 012 =

f. 84 465 – 31 234 =

g. 82 464 – 51 252 =

h. 72 302 – 31 200 =

i. 98 623 – 53 312 =

3. Calculate the following using the method below.

Example:

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

a. 82 723 – 41 305 =

b. 94 876 – 52 539 =

c. 73 853 – 31 237 =

d. 74 156 – 34 038 =

e. 85 134 – 54 108 =

f. 96 123 – 54 106 =

g. 95 218 – 61 209 =

h. 72 538 – 40 129 =

i. 88 713 – 64 305 =

4. Calculate the following using the method below.

Example:

	3	12	11	17	10
	4	3	2	8	1
–	2	6	5	9	4
	1	6	6	8	7

a. 78 886 – 43 597 =

b. 83 567 – 50 398 =

c. 93 086 – 61 297 =

d. 85 732 – 52 474 =

e. 93 621 – 52 857 =

f. 72 987 – 30 098 =

g. 94 632 – 52 753 =

h. 75 543 – 42 765 =

i. 86 964 – 37 969 =

The cost of training

My father paid R13 860 to go on a training course for two weeks. The next training course he wants to go on will cost R17 340 for a month. How much will the full costs of the training be?

Sign:

Date:

Term 4

109 Addition and Subtraction

What is the difference between the numbers? Count forwards.

60 000	70 000	80 000	90 000	100 000
10 030	20 030	30 030	40 030	50 030
26 500	27 500	28 500	29 500	30 500
54 000	64 000	74 000	84 000	94 000
91 700	91 800	91 900	92 000	92 100

What is the difference between the numbers? Count backwards.

1. What number comes next?

a. 70 000, 80 000, 90 000, _____ b. 36 548 , 46 548 , 56 548 , _____

c. 49 900, 50 900, 51 900, _____ d. 49 999, 59 999, 69 999, _____

2. Complete the table:

Number	Add 1 000	Subtract 1 000	Add 10 000	Subtract 10 000
19 564				
23 487				
44 201				
56 020				
70 009				

3. Calculate the following:

a. 92 458 + 82 = b. 78 341 + 798 =

Continue on an extra sheet of paper

c. 15 789 + 5 647 = d. 32 153 + 20 477 =

Continue on an extra sheet of paper

4. Subtract the following:

a. 77 942 – 75 = b. 15 654 – 712 =

Continue on an extra sheet of paper

c. 49 100 – 8 753 = d. 83 475 – 16 888 =

Continue on an extra sheet of paper

5. 58 500 people attended the soccer match on the first Saturday. 49 289 people attended the match on the second Saturday. How many people attended the two matches? How many more people attended the first match than the second?

Continue on an extra sheet of paper

How quickly can you calculate?

Start

1 000 + 1 000 + 3 000 + 5 000 – 2 000 + 3 000 + 5 000 – 4 000 +

7 000 – 10 000 + 10 000 + 10 000 – 10 000 + 5 000 – 2 000 + 1 000 +

20 000 – 5 000 + 10 000 + 10 000 – 10 000 – 10 000 + 20 000 = ○ End

Sign:

Date:

110 Solving buying and selling problems

Term 4

Colour the income in blue and the expenses in orange.

Pocket money R175			Airtime R24	Extra chores R43
	DVD R72,99	Books R63,99	Extra chores R38	Stationary R23,75
Extra chores R37			Received birthday gift R120	Airtime R24
Pocket money R175	Socks for R23,75		Jeans R105,00	
Magazine R50		Extra chores R43,50	T-Shirt R59,99	
	Airtime R50		Books R89,99	Paid for birthday gift R38,75

1. **Fill in the empty spaces in the table above. Make sure your expenses do not exceed you income.**
2. **List your income and expenses below and add it up.**

Income	Expenses

3. **Answer the following questions using the table on the previous page.**

a. Is this your income and expenditure for 1 or 2 months? _____

Why do you say so?

b. How much pocket money did you get over this period? _____

c. How much money did you earn doing chores? _____

d. How much money did you spend on clothes? _____

e. How much money did you spend on airtime? _____

f. How much money did you spend on yourself? _____

g. How much money did you spend on other people? _____

h. Did you plan to save any money? Why or why not? _____

Budgeting for the future



You won R10 000.

You don't want to spend the money on unnecessary things.

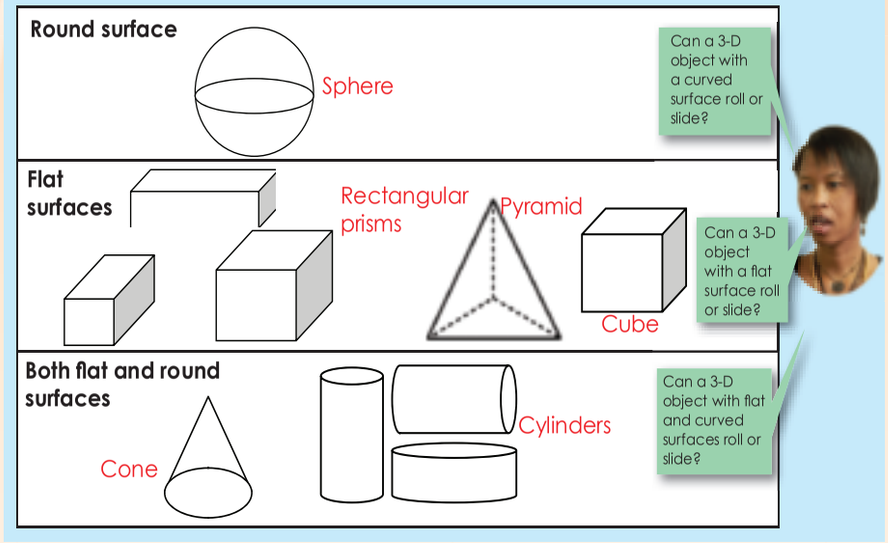
Draw up a budget.



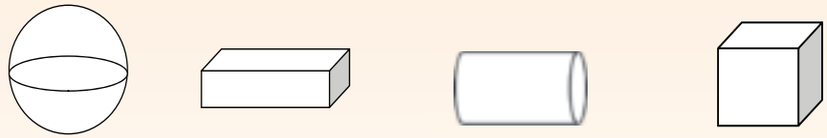
Sign:

Date:

111a Identifying and naming 3-D objects

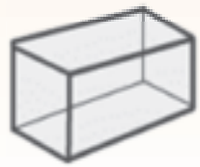


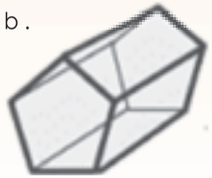
1. Draw a line to match the names and the 3-D objects.

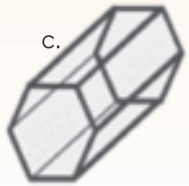


Cylinder | Rectangular prism | Cube | Sphere

2 Name the following prisms.

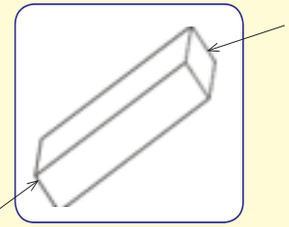
a. 

b. 

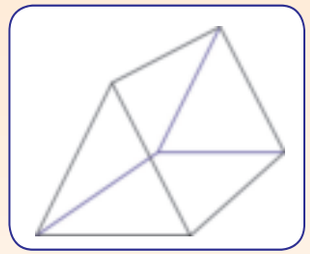
c. 

3. Describe the prisms.by filling in the missing words.

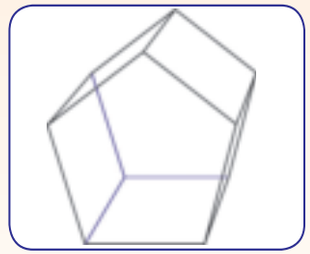
A prism is a solid object that has two flat ends of exactly the same shape and size and all flat sides. First we identify the two ends (bases) that are identical. We name the prisms by the shape of these ends.



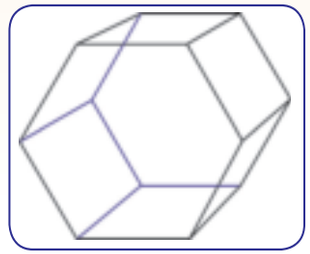
This 3-D object is made up only of **rectangles**. This is a **rectangular prism**.

a. 

This 3-D object is made up of two _____ ends and three _____ sides. This is a _____ prism.

b. 

This 3-D object is made up of two _____ and five _____. This is a _____ prism.

c. 

This 3-D object is made up of two _____ and six _____. This is a _____ _____.

Sign:

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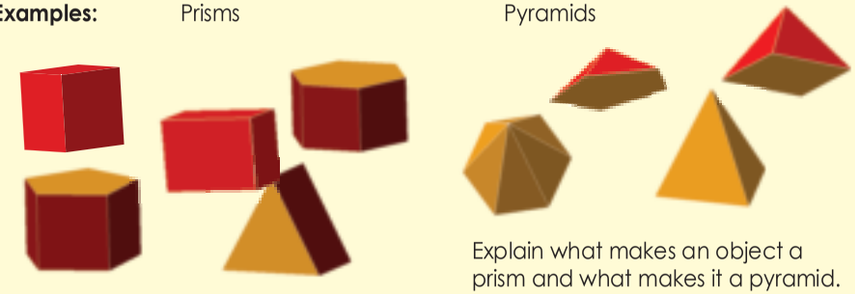
continued

111b Identifying and naming 3-D objects
continued

Examples: Prisms Pyramids



Explain what makes an object a prism and what makes it a pyramid.

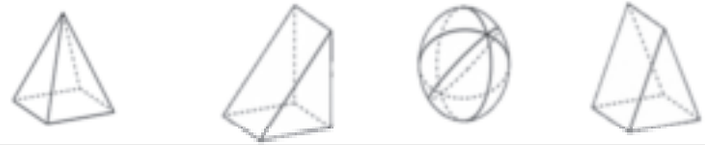
4. Complete the table.

	Name of object	Number of faces	Shapes that make up the faces	Flat or curved surfaces	Can roll or slide
a. 					
b. 					
c. 					
d. 					
e. 					

5. Colour the 3-D objects with more than five faces blue.



6. Circle the odd 3-D object in each row.

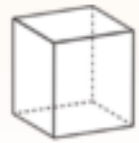
a. 

b. 

c. 

7. Name the odd 3-D object in 6c and explain why it is the odd one out.

8. Name the following 3-D objects.

a. 

b. 

c. 

Sign:

Date:

continued





Open similar boxes as shown in the pictures on the left. Discuss what you see.

9. Make a triangular prism and answer the following questions about it.



a. What kind of surfaces does this object have? _____

b. Would it roll or slide? _____

c. What is a face? _____

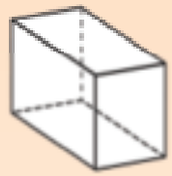
d. What shapes make up the object? _____

e. How many faces does this object have? _____

10. Colour the triangular prisms.



11. Name the following 3-D objects.

a. 

b. 

c. 

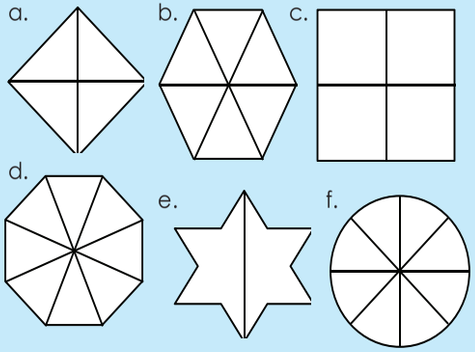
12 Complete the table below.

	Name of object	Number of faces	Shapes that make up the faces	Flat or curved surfaces
a. 				
b. 				
c. 				
d. 				
e. 				

Sign:

Date:

112 Ordering and comparing common fractions



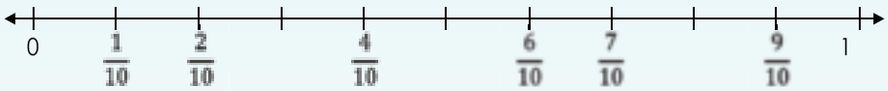
Identify the fractions represented by the parts in each shape.

Colour one or more parts of each shape to represent different fractions.

What fractions of each shape is coloured?

What fraction ,of each shape in left uncoloured?

1. Work out the missing fractions.



In order to label the number line we need to work out how much (in litres) is represented by each of the marks (gradatiion lines) on the number line. Once we have worked this out we need to label each line. In this example the number line starts with 0 and ends with 1, so it gets bigger. We were given the first two fractions that showed us we were working in tenths. The missing fractions to be filled in are $\frac{3}{10}$, $\frac{5}{10}$ and $\frac{8}{10}$.

2. Complete labelling the number line below by filling in the fractions.

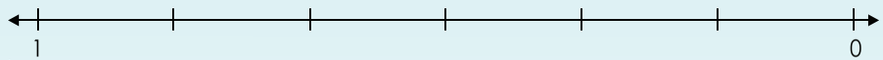


a. What fraction does each gradation line represent? _____

b. Do the numbers get bigger or smaller? _____

3. Complete labelling the number line below by filling in the fractions.

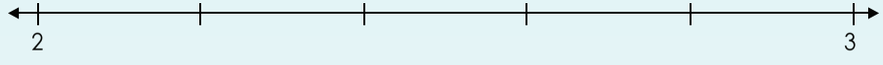
a.



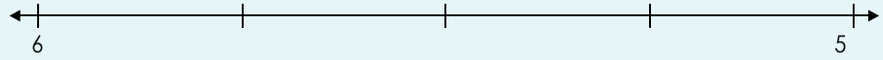
b.



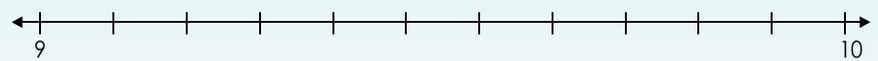
c.



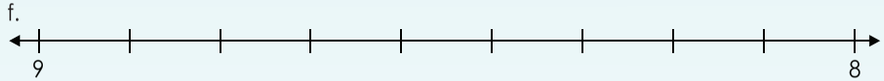
d.



e.



f.



4. Circle the mistakes on this number line and write the correct answer underneath.



5. Draw a number line that starts at 0 and ends at 1. Put the following fractions on the number line: $\frac{3}{10}$; $\frac{2}{3}$; $\frac{1}{3}$ and $\frac{1}{5}$.

6. Draw a number line that starts at 1 and ends at 2. Put the following fractions on the number line: $1\frac{1}{2}$; $1\frac{3}{10}$; $1\frac{2}{3}$ and $1\frac{1}{5}$.

Draw a number line

Draw a number line to show $\frac{3}{10}$, $1\frac{3}{10}$, $\frac{2}{10}$, and $1\frac{8}{10}$.

Sign:

Date:

113a Adding and subtracting common fractions

I have one  and my friend gives me a  . How many apples will I have?

I have five  s and I give my friend a  . How many apples do I have?

Both examples are meant to show that we can only add 'like fruit'. In the same way, when we work with fractions we can only add or subtract the fractions with the **same denominators**.

1. Label the fraction showing the numerator and denominator.

$\frac{2}{5}$

2. Use a diagram to work out the following sums.

a. $\frac{2}{6} + \frac{3}{6} =$

b. $\frac{12}{12} - \frac{8}{12} =$

3. Fill in the missing information.

a. $\frac{9}{10} - \frac{3}{10} =$ ☐

b. $\frac{2}{3} +$ ☐ $= \frac{3}{3}$

c. ☐ $- \frac{1}{5} = \frac{3}{5}$

d. $\frac{5}{7} + \frac{2}{7} =$ ☐

e. ☐ $- \frac{1}{6} = \frac{2}{6}$

f. $\frac{12}{12} -$ ☐ $= \frac{8}{12}$

4. Solve the following problems:

a. My sister bakes a cake and slices it into 6 equal pieces. My father eats 3 slices and I eat 1 slice. What fraction of the cake is left over?

b. My brother has a packet of sweets. If he eats a quarter of the packet of sweets every day, for how many days will he eat the sweets?

c. I had 7 marbles but on the way home I lost 4. What fraction of my marbles did I lose?

d. Jessica has a cake that her mother sliced into 12 equal pieces. If her uncle eats 3 slices and her brother eats 2 slices, how much is left for her to take to school?

Term 4

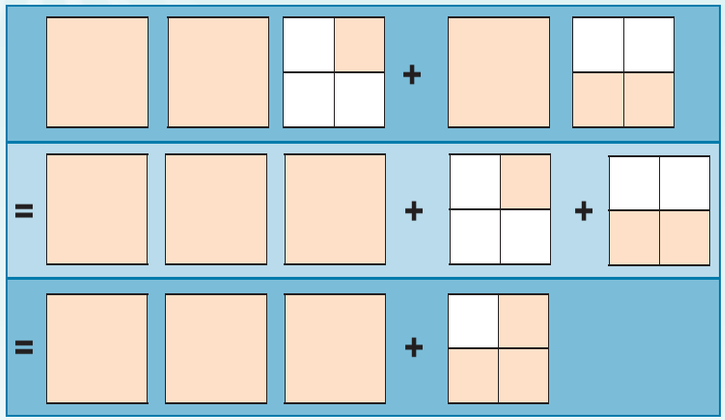
Sign:

Date:

continued ☛

113b Adding and subtracting common fractions continued

5. Use the diagrams to write down each step. We did the first step for you.



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

6. Use a diagram to work out the following sums.

a. $4\frac{2}{5} + 2\frac{3}{5} =$ _____ b. $3\frac{4}{8} - 2\frac{7}{8} =$ _____

7. Fill in the missing information.

a. $3\frac{9}{10} - 2\frac{3}{10} =$ ☐ b. $5\frac{2}{3} +$ ☐ $= 7$ c. ☐ $- 4\frac{1}{5} = \frac{3}{5}$

d. $5\frac{5}{7} + 4\frac{3}{7} =$ ☐ e. ☐ $- \frac{2}{6} = 5\frac{4}{6}$ f. $2\frac{12}{12} -$ ☐ $= 2\frac{8}{12}$

8. Solve the following problems:

a. Mother brings home $1\frac{3}{5}$ of a cake and my brother brings home another $\frac{4}{5}$. How much cake do they bring home altogether?

b. Sipho has bought $3\frac{3}{4}$ chickens. He makes $1\frac{2}{4}$ chicken for supper and packs two $\frac{1}{4}$ chickens for his children's lunch. How much chicken is left?

c. Our family goes out for pizza night. My brother brings home $\frac{3}{8}$ of his pizza, my sister $\frac{4}{8}$ and I bring home $\frac{5}{8}$. How much did we bring home altogether?

d. Jamie bakes 5 cakes and manages to sell $3\frac{3}{6}$ of the cakes at her tea room. How much cake is left over?

Problem solving

What is $10\frac{4}{9} - 4\frac{8}{9}$?

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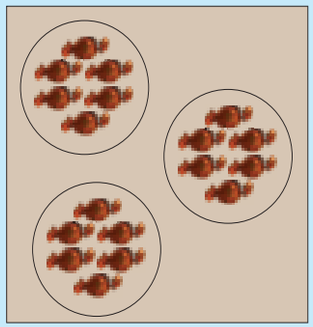
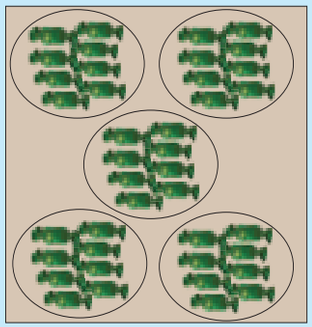
114a Fractions of whole numbers

Explain the following:





Example 1:

- If we divide 18 **sweets** amongst 3 learners, it means each learner gets $\frac{1}{3}$
- Each one gets 6 sweets.
- $\frac{1}{3}$ of 18 sweets equals 6.
- We write it as a number sentence:

$\frac{1}{3}$ of 18 = 6

Example 2:

- If we divide 40 **sweets** amongst 5 learners, it means each learner gets $\frac{1}{5}$
- Each one gets 8 sweets.
- $\frac{1}{5}$ of 40 sweets equals 8.
- We write it as a number sentence:

$\frac{1}{5}$ of 40 = 8

1. Write a fraction number sentence for each.

a. If we divide 33 marbles amongst 3 children, each one will get 11 marbles. $\frac{1}{3}$ of 33 = 11

b. If we divide 54 cards amongst 9 children, each one will get 6 cards.

c. If we divide 70 counters amongst 7 children, each one will get 10 counters.

d. If we divide 48 sweets amongst 4 children, each one will get 12 sweets.

e. If we divide 108 blocks amongst 12 children, each one will get 9 blocks.

f. If we divide 48 coins amongst 6 children, each one will get 8 coins.

2. Solve the following and show a drawing for each. You will need a separate piece of paper.

a. $\frac{1}{3}$ of 39 =

b. $\frac{1}{11}$ of 22 =

c. $\frac{1}{7}$ of 63 =

d. $\frac{1}{4}$ of 24 =

e. $\frac{1}{7}$ of 49 =

f. $\frac{1}{4}$ of 84 =

g. $\frac{1}{10}$ of 60 =

h. $\frac{1}{6}$ of 36 =

i. $\frac{1}{9}$ of 954 =

3. Solve these story sums.

a. Mandla earns $\frac{1}{3}$ of what his brother earns. If his brother earns R372, how much does Mandla earn?

b. Andile has 784 trading cards. He gives $\frac{1}{4}$ of the cards to his friend. How many cards does his friend get?

4. What is $\frac{1}{15}$ of R1050?

5. Solve the following problems:

a. If a recipe asks for $\frac{4}{5}$ of a cup of rice (250 g), how many grams are needed?

b. My mother saved R3 756. She spent $\frac{1}{3}$ of her savings on shoes. How much money is left?

Sign:

Date:

continued ☛

114b Fractions of whole numbers continued

c. A wall has 124 panels. A painter paints $\frac{2}{6}$ of these panels. How many panels are painted?



d. What is $\frac{2}{5}$ of 125 cup-cakes?



e. Abdul saves R598 to buy a computer game. The game is on special with a discount of $\frac{1}{4}$ of the price. How much money does he save?

f. Grandmother uses a 25 ℓ bottle of paraffin for her stove. If she has used $\frac{3}{5}$ of the bottle already, how much is left?

g. Jabu has worked on her homework for $\frac{3}{5}$ of 2 hours. How many minutes have passed?



h. The teacher gives Mpho $\frac{1}{24}$ of 192 sweets. How many sweets did Mpho get?



i. My aunt's cat weighs 1 266g. Her kitten weighs $\frac{2}{6}$ of the cat's mass. What is the mass of the kitten?

i. A chocolate cake needs $\frac{3}{4}$ cup of flour. If my aunt wants to bake 5 cakes, how much flour will she need?



A giant chocolate bar

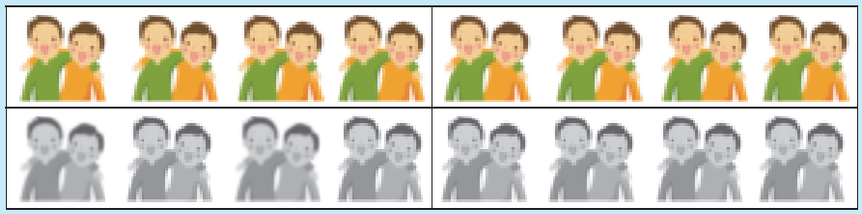
Design a chocolate bar that can be shared equally between 15 people.

Sign:

Date:

115 Fraction problems

32 children went on a trip. Two quarters took orange juice with them. How many children took orange juice?



1. There are 100 learners in Grade 5. A quarter of them come to school by bus.
   How many learners come to school by bus? _____



2. 10 girls went to the picnic. $\frac{2}{5}$ of them were wearing blue denim jeans. How many girls were not wearing blue ones?



3. 28 sick children were sent to the clinic. 7 of them were suffering from influenza.

   What fraction of the children suffer from influenza?

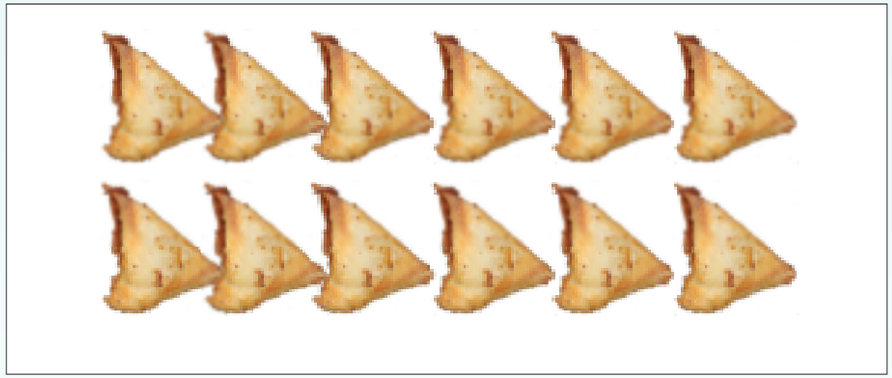
   _____



4. 16 scouts went hiking in the mountains. $\frac{6}{8}$ of them wore blue t-shirts.
   How many scouts wore blue t-shirts?



5. Suraya made 12 samoosas. Two-sixths of the samoosas were chicken. How many chicken samoosas did Suraya make?



What fraction?

There are 42 teachers in my school. Six of them are from the Eastern Cape. What fraction of the teachers are from the Eastern Cape?



Sign:

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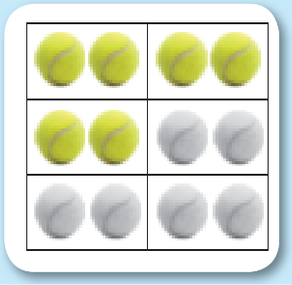
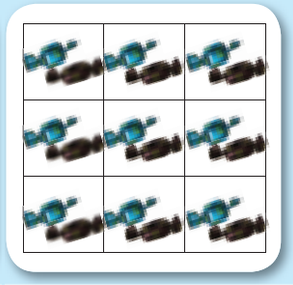
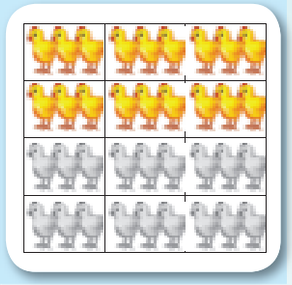
116 More fraction problems

Term 4

Give a fraction problem for each picture.







1. Solve the following problems:

a. There are 24 fruit trees on my father's farm. Two eighths of the trees in the garden are peach trees. How many peach trees are there at the farm?

b. There are 20 desks in a classroom. Three quarters of them are already broken. How many desks are broken?

c. There were 72 people on the one side of the soccer stadium. 4 people out of 18 were wearing caps. What fraction is that?

d. Two-ninths of the 27 people at the beach are wearing sunglasses. How many people are wearing sunglasses?

e. Four-thirteenths of the 13 are hungry. How many people are hungry?

f. Three sixths of the 66 children are Xhosa speaking. How many learners are not Xhosa speaking?

Children at my party



We are 32 children in our class. One quarter of the children in my class have cell phones that can play music.

- How many children have cell phones that can play music?
- How many children do not have cell phones or cell phones that cannot play music?

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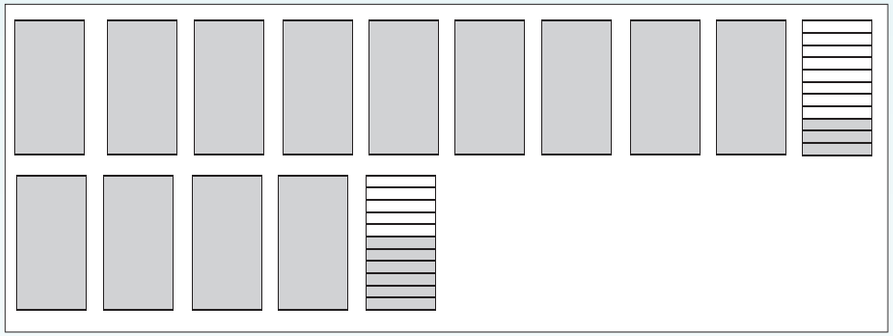
Date:

117 Even more fraction problems

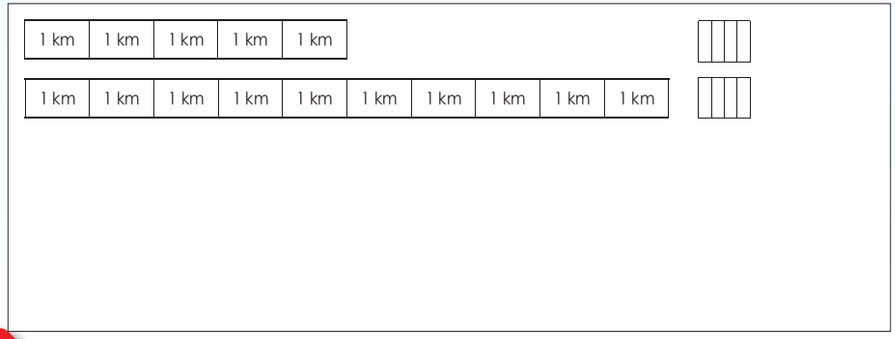
How fast can you complete the following?

$3\frac{1}{4} + 1\frac{2}{4} = 4\frac{3}{4}$	$1\frac{3}{9} + 2\frac{5}{9} =$	$2\frac{2}{10} + 4\frac{4}{10} =$
$1\frac{4}{6} + 7\frac{1}{6} =$	$3\frac{4}{8} + 4\frac{1}{8} =$	$7\frac{1}{5} + 2\frac{2}{5} =$
$1\frac{1}{3} + 2\frac{1}{3} =$	$2\frac{3}{5} + 3\frac{1}{5} =$	$3\frac{5}{8} + 5\frac{2}{8} =$
$6\frac{1}{4} + 1\frac{1}{4} =$	$4\frac{6}{11} + 1\frac{3}{11} =$	$1\frac{7}{12} + 7\frac{2}{12} =$

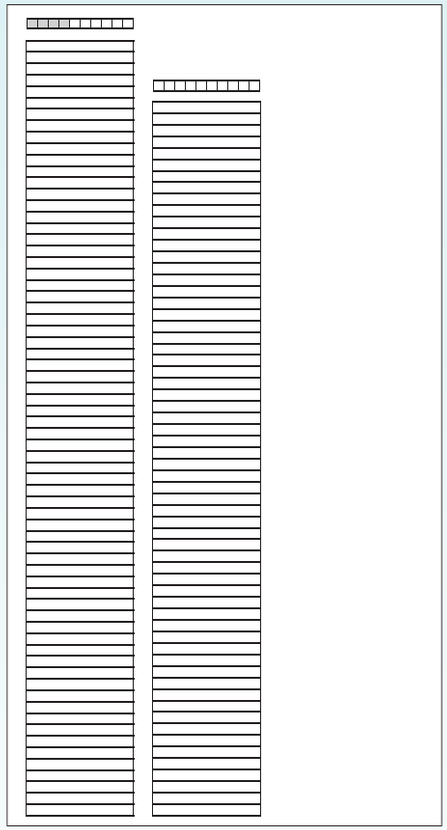
1. Sibongile picked nine and three elevenths bushels of apples on Friday and four and seven elevenths of bushels on Saturday. How many bushels of apples did she pick altogether?



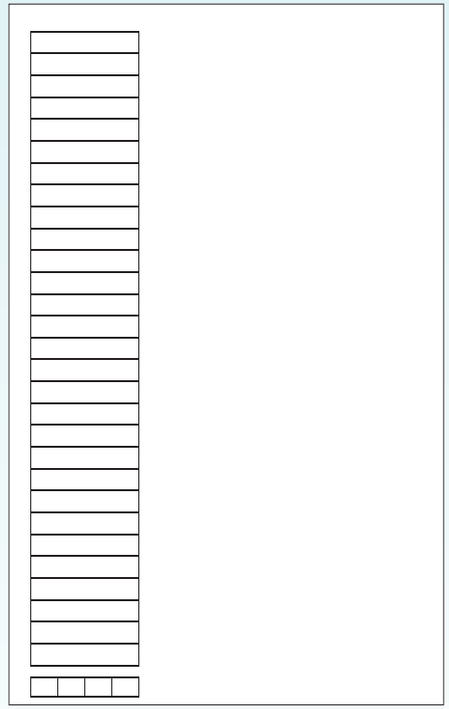
2. The distance from our house to the grocery store is five and one quarter kilometres. The distance from our house to the mall is ten and three quarter kilometres. How much further is the mall than the grocery store from our house?



3. Mandla is sixty eight and four tenths centimetres tall. Ben is sixty two and three tenths centimetres tall. How much taller is Mandla than Ben?



4. Mr Harris bought twenty nine and two quarters metres of rope to make a tire swing for Ben. When he finished the swing, he had five and a half metres of rope left over. How many metres of rope did he use to make the swing?



Make your own drawing.

Make your own drawing to solve this:

Mrs Smith only had three and seven twelfths cups of cake flour left in the bag. She used two and five twelfths cups of flour to make a cake. How much flour was left in the bag?

Sign:

Date:

118 Addition and subtraction of mixed numbers

How fast can you answer this?

$1\frac{2}{6} + 6\frac{2}{6} =$	$4\frac{3}{9} + 3\frac{4}{9} =$	$2\frac{1}{5} + 2\frac{3}{5} =$
$4\frac{5}{10} + 4\frac{4}{10} =$	$8\frac{2}{5} + 1\frac{1}{5} =$	$3\frac{5}{11} + 2\frac{4}{11} =$
$1\frac{1}{6} + 8\frac{3}{6} =$	$3\frac{1}{3} + 4\frac{1}{3} =$	$3\frac{2}{4} + 6\frac{1}{4} =$
$5\frac{5}{8} + 2\frac{2}{8} =$	$3\frac{3}{4} + 1\frac{1}{4} =$	$3\frac{7}{12} + 1\frac{4}{12} =$

1. Draw a picture or diagram to solve the word problems. If you need more space for your pictrue or diagrams, use a separate sheet of paper.

a. Nicholas picked six and two sixths bushels of wheat yesterday and six bushels today. How many bushels of wheat did Nicholas pick in all? Draw a picture to show your answer.

b. Palesa bought seventy three and five ninths centimetres of ribbon to make bows for her party dress. After the bows were all made, she still had four and two ninths centimetres of ribbon left. How many centimetres of ribbon did she use for the bows? Draw a picture to show your answer.

c. Lungisani collected two and four twelfths of a litre of honey from his beehives. He gave one and two twelfths litres of honey to his aunt and uncle. How much honey was left? Draw a picture to show your answer.

d. Elizabeth's breadstick measured twelve and one fifth centimetres. Katherine's breadstick measured eighteen and three fifths centimetres. What was the total length of both breadsticks? Draw a picture to show your answer.

e. Kevin has a fig tree in his yard that is one and four eights metres tall. The acacia tree is three and six eights metres tall. How much taller is the acacia tree than the fig tree?

f. Mbali walked a kilometre in eleven and four twelfths minutes. It took Lisa thirteen and eight twelfths minutes. How much longer did it take Lisa to walk a kilometre? Draw a picture to show your answer.

Family fractions

Solve these fractions with a family member.

Suzy ate $\frac{1}{4}$ of the pizza. She then ate $\frac{1}{2}$ of the pizza. What fraction did she eat?

There were 10 equal pieces of pizza. Gugu ate $\frac{1}{2}$ of them and Mandla ate $\frac{1}{5}$ of them. How many pieces of pizza were eaten altogether?

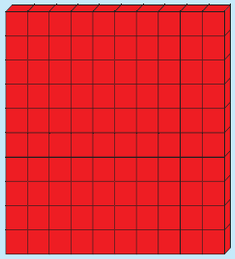
Mkhize had 90 cows. He sold 30 cows. What fraction of the cows did he sell?

Sign:

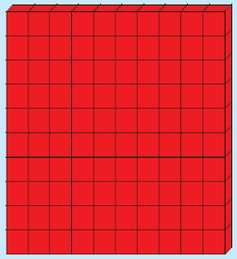
Date:

119a 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 102 objects. Divide them into groups of 4 objects each.

How many groups do you have? _____

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

b. Draw a picture of your groups.

c. Make a division number sentence.

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

	A picture	How many groups do you have?	How many objects are left over that do not fit into a group?	Division number sentence
Divide 100 objects into 5 groups.				
Divide 1 000 objects into 8 groups.				
Divide 1 000 objects into 7 groups.				
Divide 1 000 objects into 6 groups.				

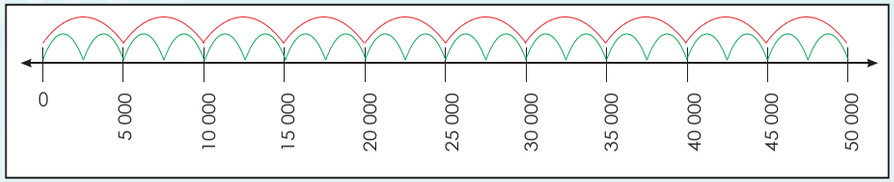
Sign:

Date:

continued

119b Grouping and sharing continued

3. Use the number line to help you answer the questions below.



Look at the red groups

a. How many red groups do you have from 0 – 50 000? _____

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. _____

Look at the green groups

e. How many **green** groups do you have from 0 – 50 000? _____

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. Answer the following and write a division number sentence for each

a. 20 divided into 5 groups of 4. 20 ÷ 5 = 4

b. 200 divided into 50 groups of 4. _____

c. 2 000 divided into 500 groups of 4. _____

d. 20 000 divided into 5 000 groups of 4. _____

5. You have 50 000 objects. You divide it into 12 groups.

a. Show it on the number line.

b. How many objects are in each group? _____

c. How many objects are left? _____

d. Write it as a division sum. _____

6. Answer the following and write a division sum for each.

a. 22 divided in 5 groups and 2 are left. 22 ÷ 5 = 4 rem 2

b. 220 divided in 50 groups and _____ are left. _____

c. 2 200 divided in 500 groups and _____ are left. _____

d. 22 000 divided in 5 000 groups and _____ are left. _____

How many groups?



How many groups can you make that will give you a total sum of 50 000? Remember all the groups must be the same size.

Sign:

Date:

120 Division words

Term 4

Quick recall:

10 ÷ 2	4 ÷ 1	50 ÷ 5	81 ÷ 9	18 ÷ 2	64 ÷ 8
45 ÷ 9	24 ÷ 8	16 ÷ 4	5 ÷ 1	14 ÷ 7	28 ÷ 4
42 ÷ 2	90 ÷ 3	54 ÷ 9	84 ÷ 7	25 ÷ 5	30 ÷ 5
28 ÷ 7	48 ÷ 3	20 ÷ 4	75 ÷ 5	21 ÷ 3	92 ÷ 4
36 ÷ 4	60 ÷ 4	24 ÷ 6	72 ÷ 3	8 ÷ 2	39 ÷ 3

1. Estimate and then calculate the following. Make a drawing to show your answer.

a. Share 168 between 7.	b. Divide 216 by 6.	c. How many groups of 3 can be made from 126?
d. How many lengths of 9 cm can you cut from 234 cm?	e. Is 230 divisible by 5? How do you know?	f. Give two numbers with a quotient of 100.
g. Share 315 between 9.	h. Divide 232 by 8.	i. How many groups of 4 can be made from 152?
j. Give two numbers with a quotient of 152.	k. Divide 434 by 7.	l. Share 159 between 3.

2. Make drawings on a separate sheet to show your calculations.

a. I have R150. Tickets cost R10,00 each.
How many can I buy? _____

b. There are 160 people. There are 4 seats in a row.
How many rows are there? _____

c. I have 200 sweets. One packet holds 10 sweets.
How many packets can I fill? _____

d. How many metres are there in 2 kilometres? _____

e. What is one quarter of 100? _____

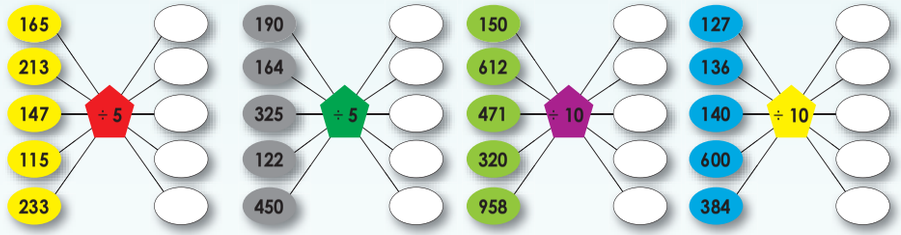
f. How many 4s are there in 100? _____

g. What is half of 100? _____

h. What is a fifth of 100? _____

i. Make up your own division word sum. _____

3. Share each of the following between 5 and 10. Write down what the remainder will be.



Circled numbers

Circle the numbers that you can divide exactly by 5 in blue and by 5 with a remainder in red.

215 280 514 347 305 841 902 300

312 320 315 954 654 311 736 357

106 193 715 333 947 344 209 700

Sign:

Date:

121 Division and remainders

Term 4

Quick recall:

6 ÷ 6	15 ÷ 5	16 ÷ 8	20 ÷ 4	6 ÷ 2	18 ÷ 9
19 ÷ 1	12 ÷ 4	12 ÷ 2	18 ÷ 3	9 ÷ 3	7 ÷ 7
5 ÷ 5	12 ÷ 3	10 ÷ 5	8 ÷ 8	20 ÷ 5	14 ÷ 7
6 ÷ 3	10 ÷ 2	15 ÷ 3	16 ÷ 4	12 ÷ 6	9 ÷ 9
20 ÷ 2	8 ÷ 2	18 ÷ 2	12 ÷ 1	18 ÷ 1	18 ÷ 6

1. Estimate and then calculate the following:

a. 90 ÷ 10 = _____

b. 150 ÷ 10 = _____

c. 300 ÷ 100 = _____

d. 330 ÷ 10 = _____

e. 700 ÷ 10 = _____

f. 900 ÷ 100 = _____

g. 550 ÷ 10 = _____

h. 500 ÷ 100 = _____

2. Complete the multiplication board. Colour the numbers that are divisible by 2 red, and those that have a remainder blue.

×	10	20	30	40	50	60	70	80	90
1									
2									
3									
4									
5									
6									
7									
8									
9									

a. Write down all the numbers that are divisible by 3.

_____

b. Write down all the numbers that are not divisible by 3.

_____

c. How did the multiplication board help you to work it out quickly?

_____

3. Colour the numbers that are divisible by 4 red and the numbers that are divisible by 5 blue.

×	10	20	30	40	50	60	70	80	90
1									
2									
3									
4									
5									
6									
7									
8									
9									

a. What do you get when you mix red and blue? _____

b. Which numbers are coloured purple?

_____

c. What do you know about these numbers?

_____

d. Are the purple numbers divisible by 3?

_____

I have a number

In pairs play the following.

Say to your friend: "I have a 2-digit number. It is divisible by 2. Guess what my number is?"

Give your friend some clues until he or she gets it correct.

Take more turns using other numbers.

Sign:

Date:

Quick recall:

45 ÷ 9	35 ÷ 7	38 ÷ 2	36 ÷ 9	49 ÷ 7	50 ÷ 5
30 ÷ 6	36 ÷ 4	48 ÷ 6	42 ÷ 6	48 ÷ 8	36 ÷ 6
21 ÷ 3	12 ÷ 2	49 ÷ 1	12 ÷ 4	20 ÷ 4	42 ÷ 7
32 ÷ 8	27 ÷ 9	28 ÷ 2	24 ÷ 3	33 ÷ 3	28 ÷ 4
40 ÷ 5	42 ÷ 3	25 ÷ 5	40 ÷ 4	44 ÷ 4	35 ÷ 5

Example 1:

337 ÷ 3 = (300 + 30 + 7) ÷ 3
= (300 ÷ 3) + (30 ÷ 3) + (7 ÷ 3)
= 100 + 10 + 2 remainder 1
= 112 remainder 1

Test the answer.

Example 2:

775 ÷ 7 = (700 + 75) ÷ 7
= (700 ÷ 7) + (75 ÷ 7)
= 100 + 10 remainder 5
= 110 remainder 5

Test the answer.

1. Show your calculations on a separate piece of paper:

a. 668 ÷ 6 =
b. 541 ÷ 6=
c. 367 ÷ 6=
d. 673 ÷ 6 =
e. 248 ÷ 6 =

2. Show your calculations on a separate piece of paper:

a. 884 ÷ 8 =
b. 405 ÷ 8 =
c. 326 ÷ 8 =
d. 818 ÷ 8 =
e. 649 ÷ 8 =

Example 3:

842 ÷ 4 = (800 + 42) ÷ 4
= (800 ÷ 4) + (42 ÷ 4)
= 200 + 10 remainder 2
= 210 remainder 2

Test the answer.

Example 4:

745 ÷ 7 = (700 + 45) ÷ 7
= (700 ÷ 7) + (45 ÷ 7)
= 100 + 6 remainder 3
= 106 remainder 3

Test the answer.

3. Show your calculations on a separate piece of paper:

a. 412 ÷ 5 =
b. 358 ÷ 5 =
c. 694 ÷ 5 =
d. 213 ÷ 5 =
e. 914 ÷ 5 =

4. Show your calculations on a separate piece of paper:

a. 947 ÷ 9 =
b. 276÷ 9 =
c. 363 ÷ 9 =
d. 594 ÷ 9 =
e. 721÷ 9 =

Example 5:

```
      8 2
8 | 6 5 6
– 6 4 0      8 x 80
    1 6
–   1 6      8 x 2
        0
```

Answer: 82

Example 6:

```
      8 2    rem 4
8 | 6 6 0
– 6 4 0      8 x 80
    2 0
–   1 6      8 x 2
        4
```

Answer: 82 remainder 4

5. 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 or on a piece a paper.

594 ÷ 6 = 213 ÷ 9 = 818 ÷ 7 =

136 ÷ 3 = 364 ÷ 8 = 425 ÷ 2 =

256 ÷ 5 = 631 ÷ 4 = 139 ÷ 9 =

189 ÷ 4 = 543÷ 3 = 780 ÷ 4 =

356 ÷ 2 = 237 ÷ 8 = 397÷ 7 =

561 ÷ 7 = 501÷ 6 = 900 ÷ 6 =



6. Test all your answers by multiplying your results. Show all your calculations in your writing book or on a piece of paper.

Explain to your parent!!

Why do we say division is the opposite of multiplication?
At home explain this to one of your family members.

Sign:

Date:

123 Division: 3-digits by 2-digits

Term 4

Quick recall:

600 ÷ 60 =	840 ÷ 70 =	500 ÷ 20 =	780 ÷ 60 =	600 ÷ 25 =
250 ÷ 50 =	640 ÷ 80 =	600 ÷ 25 =	920 ÷ 40 =	490 ÷ 70 =
360 ÷ 60 =	440 ÷ 40 =	720 ÷ 80 =	950 ÷ 50 =	540 ÷ 60 =
400 ÷ 20 =	960 ÷ 30 =	990 ÷ 30 =	550 ÷ 25 =	910 ÷ 10 =
900 ÷ 90 =	810 ÷ 90 =	120 ÷ 30 =	480 ÷ 80 =	540 ÷ 90 =

Example 1:

480 ÷ 20 = (400 + 80) ÷ 20
= (400 ÷ 20) + (80 ÷ 20)
= 20 + 4
= 24

Test the answer.

Example 2:

670 ÷ 60 = (600 + 70) ÷ 60
= (600 ÷ 60) + (70 ÷ 60)
= 10 + 1 rem 10
= 11 rem 10

Test the answer.

1. Show your calculations in a writing book or on a piece of paper.

a. 352 ÷ 30 =
b. 486 ÷ 30 =
c. 512 ÷ 30 =
d. 633 ÷ 30 =
e. 470 ÷ 30 =

2. Show your calculations in a writing book or on a piece of paper.

a. 480 ÷ 60 =
b. 568 ÷ 60 =
c. 990 ÷ 60 =
d. 847 ÷ 60 =
e. 605 ÷ 60 =

3. Show your calculations in a writing book or on a piece of paper.

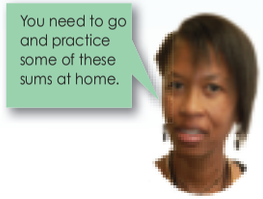
a. 354 ÷ 40 =
b. 682 ÷ 40 =
c. 448 ÷ 40 =
d. 960 ÷ 40 =
e. 862 ÷ 40 =

4. Show your calculations in a writing book or on a piece of paper.

a. 287 ÷ 70 =
b. 465 ÷ 70 =
c. 625 ÷ 70 =
d. 890÷ 70 =
e. 912 ÷ 70 =

5. Show your calculations in a writing book or on a piece of paper.

a. 265 ÷ 80 =
b. 648 ÷ 80 =
c. 592 ÷ 80 =
d. 962 ÷ 80 =
e. 999 ÷ 80 =


You need to go and practice some of these sums at home.

Example 3:

```
          3  3  rem 15
2 5 | 8 4 0
    - 7 5 0        2 5 x 3
        9 0
    -   7 5        2 5 x 3
        1 5
```

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 a writing book or on a piece of paper.

a. 338 ÷ 13 = b. 460 ÷ 26 = c. 873 ÷ 58 =

d. 814 ÷ 37 = e. 960 ÷ 28 = f. 927 ÷ 63 =

7. There are 678 books in the shop. The shop owner packed them 20 in a box. How many boxes does he need?

How fast can I calculate?

How fast can you do the sums below?

200 ÷ 2 ÷ 10 ÷ 5 ÷ 2 =

128 ÷ 2 ÷ 2 ÷ 2 ÷ 2 =

Make your own sum.

___ ÷ ___ ÷ ___ ÷ ___ ÷ ___ =

Sign:

Date:

124 Factors

A factor is a whole number that divides exactly into another whole number.
For example, what are the factors of 12? Try making 12 in different ways

Your answer should look like this:
12 x 1 = 12
6 x 2 = 12
4 x 3 = 12



The full list of factors of 12 is 1, 2, 3, 4, 6, and 12.

Some numbers have many factors, so it is a good idea to work in an organised way or you may miss some.

Don't forget to include 1 and the number itself in your list.

Example:
Factors of 48. Start with 1 and break up you number into pairs of numbers.
1 x 48, 2 x 24, 3 x 16, 4 x 12 and 6 x 8 all make 48.
Write the list in order: 1, 2, 3, 4, 6, 8, 12, 16, 24, 48.

1. Complete the following:

a. Factors of 36. _____
Write the list in order: _____

b. Factors of 18. _____
Write the list in order: _____

c. Factors of 72. _____
Write the list in order: _____

d. Factors of 54. _____
Write the list in order: _____

e. Factors of 16. _____
Write the list in order: _____

f. Factors of 84. _____
Write the list in order: _____

g. Factors of 30. _____
Write the list in order: _____

h. Factors of 44. _____
Write the list in order: _____

i. Factors of 63. _____
Write the list in order: _____

j. Factors of 108. _____
Write the list in order: _____

2. Look at the example. Do the same with the numbers below.

Factors of 48:

1 2 3 4 6 8 12 16 24 48

a. 27

b. 33

c. 28

d. 45

e. 66

These are the factors of ...

1 10 25 50 2 20 4 100 5 _____

1 5 10 25 50 2 20 4 100 8 200 40 _____

Sign:

Date:

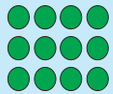
125 More factors

Factors of 12: Look at the drawings and discuss it.

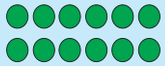
12



1 x 12 = 12 or 12 ÷ 1 = 12



3 x 4 = 12 or 12 ÷ 4 = 3



6 x 2 = 12 or 12 ÷ 6 = 2

The factors of 12 are 1, 2, 3, 4, 6 and 12.

1. In how many ways can you draw groups of circles to show the factors of each of the numbers below?

8	16
30	28
25	17

2. Fill in the missing numbers in the table below. Colour the following numbers, and then write down their factors (other than 1 and itself). Say if its only factors are itself and 1.

a. 12 in red 2, 3, 4, 6

b. 15 in green _____

c. 35 in blue _____

d. 50 in orange _____

e. 81 in pink _____

f. 100 in brown _____

x	1	2	3	4	5	6	7	8	9	10
1										
2						12				
3				12						
4			12							
5										
6		12								
7										
8										
9										
10										



Factor quiz

Which **number** between **1** and **50** has the most **factors**?

Sign:

Date:

126a Division problem solving

Sam shares 253 sweets equally amongst 24 children.
How many sweets does each child get?

Read and underline the question.

Sam shares 253 sweets equally amongst 24 children.
How many sweets does each child get?

Circle the key words.

Sam shares 253 sweets equally amongst 24 children.
How many sweets does each child get?

Circle the key numbers and hidden numbers.

Are there any hidden numbers? (No)



Solve by using pictures/ drawings.

Sweets left over.



253 ÷ 24 = ☐

Write a number sentence.

```
   10 r 13
24 ⟌253
   240
    13
```

Show all your calculations.

24 x 10 = 240 + 13 = 253.

Check your answers

1. Solve the following problems:

a. There are 328 learners in the Intermediate Phase. There are 8 classes. About how many children are there in each class?

b. Jabu buys 376 sweets and packs them in 18 packets. How many sweets will be in each packet? How many remainders will there be?



c. James and his class decided to go to a restaurant for their end of year party. There are 23 learners in the class, including James. The bill was R575. How much did each learner have to pay?

d. Father has a 551 m long rope. He needs 29 equal pieces. How long will each piece of rope be?



Sign:

Date:

continued ☛

126b Division problem solving continued



e. Bongi has 654 marbles. She has to share them equally amongst 32 learners. How many marbles will each learner get?

f. James bought 828 litres of water for 34 people. How much water will each person get?



g. A large supermarket has 16 tills. During a Saturday special 736 customers were served. Assuming all cashiers helped the same number of customers, how many customers were helped per till?



h. Adam receives 984 cans of cool drink that he has to divide amongst 42 charities. How many cans will each charity receive?



i. Lucy rides in a long distance bicycle race of 855 km. There are 45 places where she has to check in throughout the race. If all the checkpoints are the same distance apart, how far is it from one point to the next one?

j. Buhle has a roll of string that is 546 m long. She has to divide it into 27 parts in order to complete a project. How long will each piece of string be?



k. There are 728 books. We have to make 26 stacks of books. How many books will there be in each stack?



Sharing stickers

Max has collected 843 stickers and decides to share them amongst his 24 classmates. How many stickers will each learner receive?

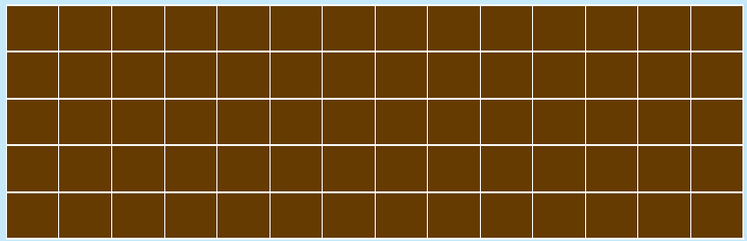
Sign:

Date:

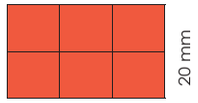
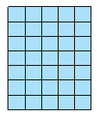
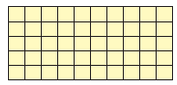
Term 4

127 Perimeter, length and width

What is the distance around the table?



1. Complete the table.

Rectangle	Perimeter in units	Length	Width	Perimeter in:
	10 units			mm: ____ cm: ____
				mm: ____ cm: ____
				mm: ____ cm: ____
				mm: ____ cm: ____
				mm: ____ cm: ____

2. Calculate the perimeter. Make a sketch to help you.



Length: 8 units Width: 4 units

Perimeter in mm: ____ cm: ____

Length: 7 units Width: 5 units

Perimeter in mm: ____ cm: ____

3. Make a drawing to show your answer.

a. The length is 10 cm and the width is 5 cm. What is the perimeter?

b. The length is 20 cm and the width is 10 cm. What is the perimeter?

c. The perimeter is 24 cm. What can the length and width be. Give 3 possible answers.

Length: ____ ____ ____

Width: ____ ____ ____

Perimeter at home



Find out what is the perimeter of your stand.

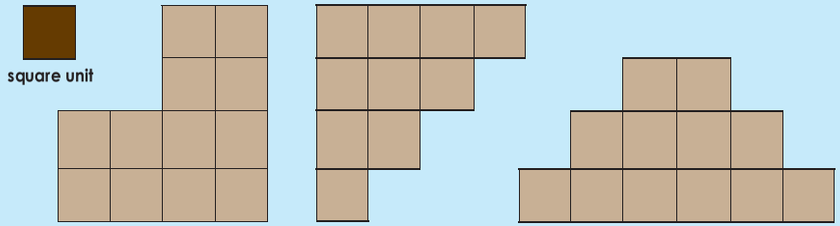
You should give your perimeter in the number of steps you take.

Sign:

Date:

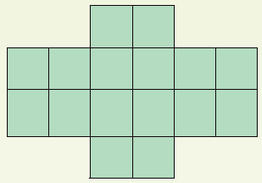
128 Square units

How many square units will it take to cover these shapes?



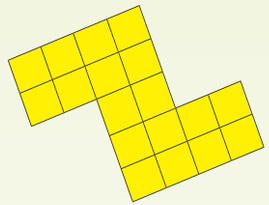
1. How many square units will it take to cover these coloured shapes?

a.



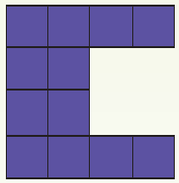
_____ square units

b.



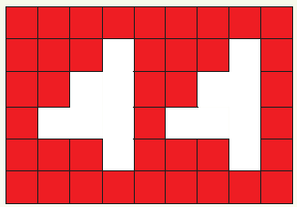
_____ square units

c.



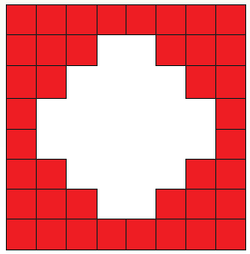
_____ square units

d.



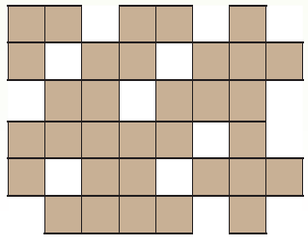
_____ square units

e.



_____ square units

f.



_____ square units

2. Draw the following. Your drawings should all be different from each other.

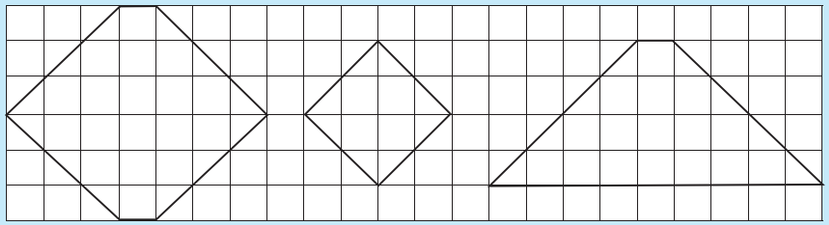
A rectangle with 8 square units	A rectangle with 8 square units	A rectangle with 8 square units
A rectangle with 16 square units	A rectangle with 16 square units	A rectangle with 16 square units
A rectangle with 30 square units	A rectangle with 30 square units	A rectangle with 30 square units

Sign:

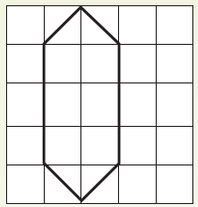
Date:

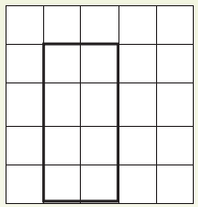
Area and perimeter

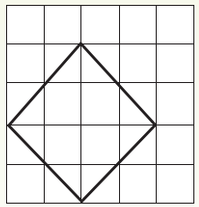
Count the square units

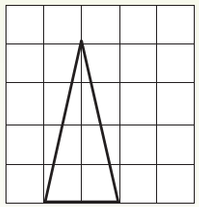


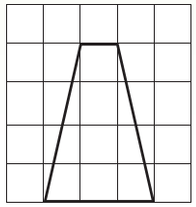
1. How many square units is each shape?

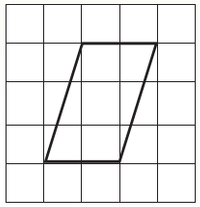
a.  _____

b.  _____

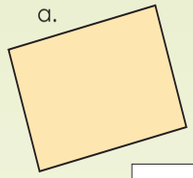
c.  _____

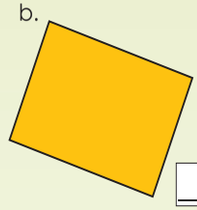
d.  _____

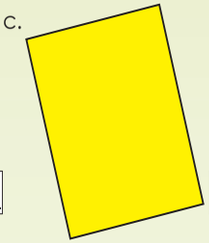
e.  _____

f.  _____

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

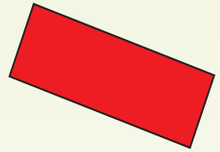
a.  _____

b.  _____

c.  _____

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

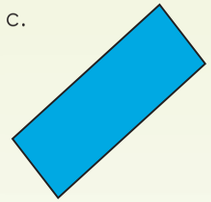


a. 

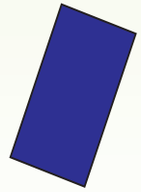
Length: _____
Width: _____
Total distance around the shape: _____

b. 

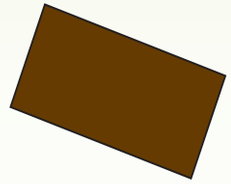
Length: _____
Width: _____
Total distance around the shape: _____

c. 

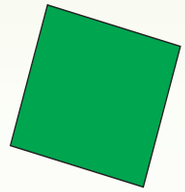
Length: _____
Width: _____
Total distance around the shape: _____

d. 

Length: _____
Width: _____
Total distance around the shape: _____

e. 

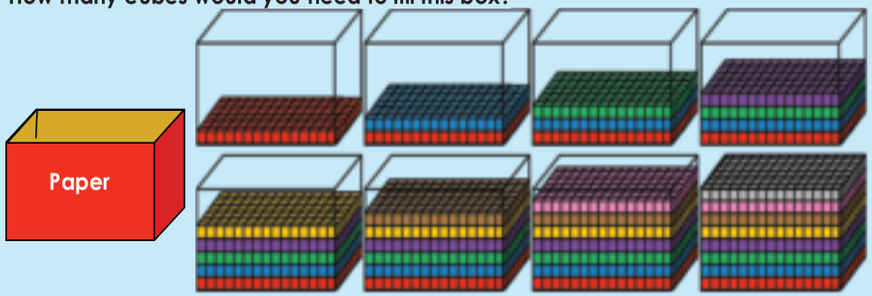
Length: _____
Width: _____
Total distance around the shape: _____

f. 

Length: _____
Width: _____
Total distance around the shape: _____

Sign: _____
Date: _____

How many cubes would you need to fill this box?



1. Answer the following questions:

a. Place cubes in the first layer. How many cubes are in this layer? _____

b. How many cubes are in the:

2nd layer? _____

3rd layer? _____

4th layer? _____

5th layer? _____

6th layer? _____

7th layer? _____

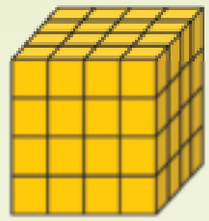
8th layer? _____

2. How many cubes will fill the whole box?

a. Calculate it using addition.	b. Calculate it using multiplication.

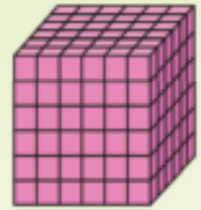
3. How many cubic units are there?

a.



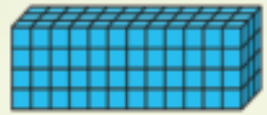
_____ cubic units

b.



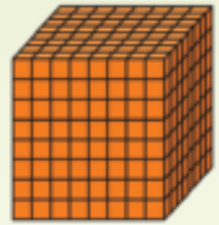
_____ cubic units

c.



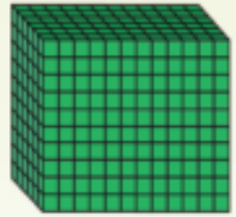
_____ cubic units

d.



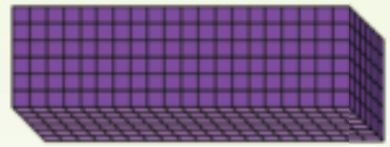
_____ cubic units

e.



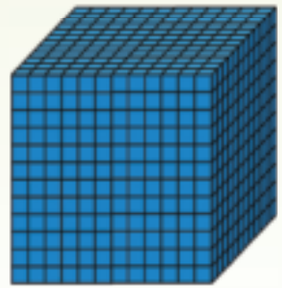
_____ cubic units

f.



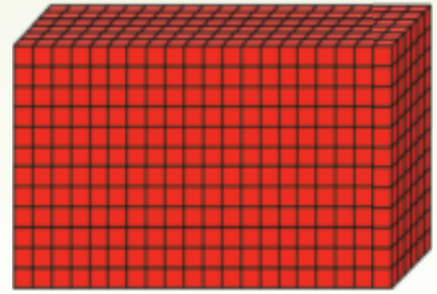
_____ cubic units

g.



_____ cubic units

h.



_____ cubic units

In order

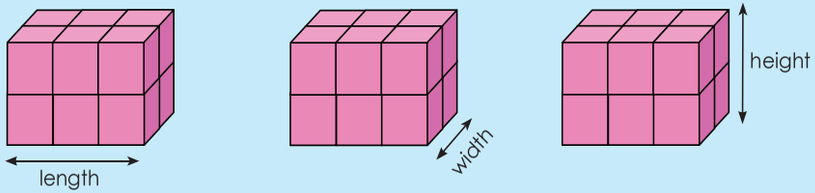
List the objects above in order from the smallest to the biggest volume. (Assume all the small blocks have the same size.)

Sign:

Date:

131 More volume

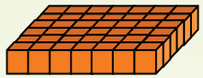
What is the length, width and height of this block?



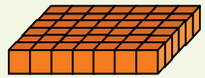
What is the length of the block?
What is the width of the block?
What is the height of the block?

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

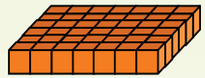
a.



What is the length of the block? _____

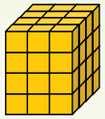


What is the width of the block? _____

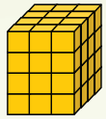


What is the height of the block? _____

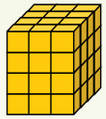
b.



What is the length of the block? _____

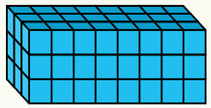


What is the width of the block? _____

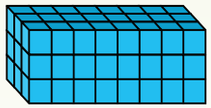


What is the height of the block? _____

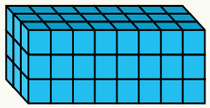
c.



What is the length of the block? _____

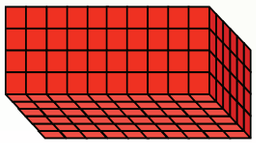


What is the width of the block? _____

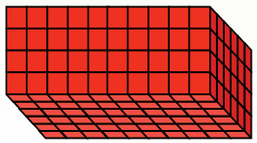


What is the height of the block? _____

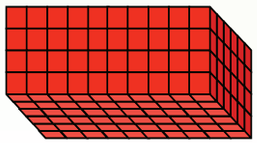
d.



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 unit say how many units there are.

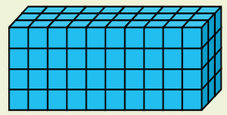
a.



Length = _____ units
Width = _____ units
Height = _____ units

We can say: _____ x _____ x _____ = _____ **cubic units**

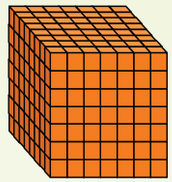
b.



Length = _____ units
Width = _____ units
Height = _____ units

We can say: _____ x _____ x _____ = _____ **cubic units**

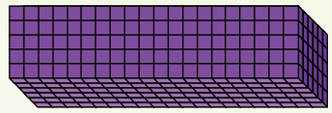
c.



Length = _____ units
Width = _____ units
Height = _____ units

We can say: _____ x _____ x _____ = _____ **cubic units**

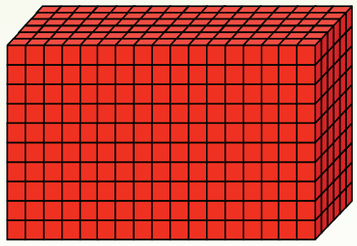
d.



Length = _____ units
Width = _____ units
Height = _____ units

We can say: _____ x _____ x _____ = _____ **cubic units**

e.



Length = _____ units
Width = _____ units
Height = _____ units

We can say: _____ x _____ x _____ = _____ **cubic units**

Cubic units

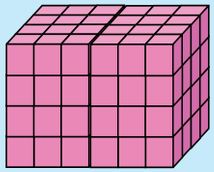
What will the length, width and height of an object with 240 cubic units be?

Sign:

Date:

More about volume

Talk about these three solutions:



The length equals to **6** units.
The width equals to **4** units.
The height equals to **4** units.

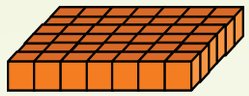
Solution 1:
24 + 24 + 24 + 24
= 96 cubic units.

Solution 2:
16 + 16 + 16 + 16 + 16 + 16
= 96 cubic units.

Solution 3:
6 x 6 x 6
= 24 cubic units.

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

a.

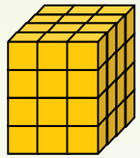


Solution 1:

Solution 2:

Solution 3:

b.

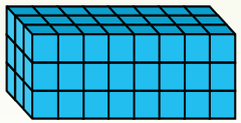


Solution 1:

Solution 2:

Solution 3:

c.

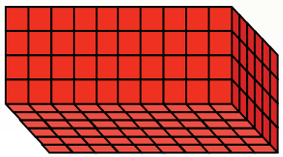


Solution 1:

Solution 2:

Solution 3:

d.



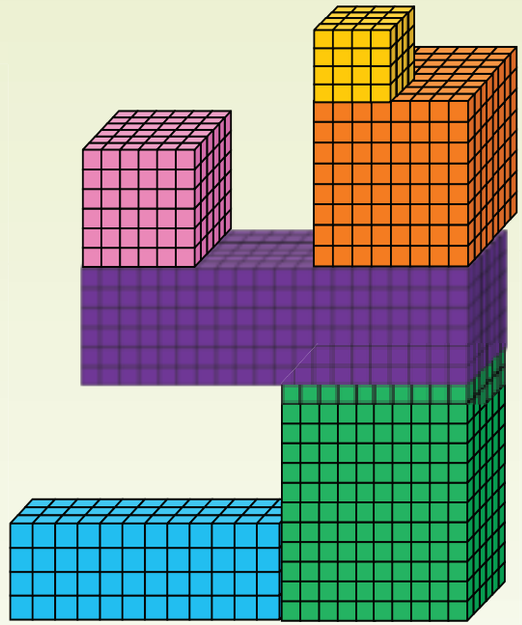
Solution 1:

Solution 2:

Solution 3:

2. How many cubic units are in this modern building? Use the table to help you.

	Solution



Total

Sign:

Date:

133 Map work

Explain to your friend how to get from the school to your house.



1. 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. Triangle G2
b. Square
c. Rectangle
d. Pentagon
e. Hexagon
f. Heptagon
g. Cube
h. Triangular pyramid
i. Triangular prism
j. Square pyramid

2. Draw the following on the grid:

a. Triangle in E 1
b. Square in F7
c. Pentagon in B2
d. Rectangle in A9
e. Hexagon in G3
f. Heptagon in H10
g. Cube in D5
h. Triangular prism in C3
i. Triangular pyramid in J4
j. Square pyramid in i 8

3. Draw the path on this map by following the instructions a to k. We will start the first steps for you.

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

a. Start on B2. Go 2 blocks to the right. You will be on D2 now.
b. Go one down. You are in ____ now
c. Go three to the right. You are in ____ now
d. Go two up. You are in ____ now.
e. Go three to the right. You are in ____ now
f. Go eight down. You are in ____ now.
g. Go nine to the left. You are in ____ now.
h. Go one down. You are in ____ now.
i. Go five to the right. You are in ____ now.
j. Go four up. You are in ____ now.
k. Go five to the left. You are in ____ now.

Where did Dudu go?

	Orange	Apple	Grapes
Pie	A	B	C
Chips	D	E	F
Juice	G	H	I

- If Dudu has grapes and pies, where did she go?
- If Dudu has orange and chips, where did she go?
- Dudu collected an apple and the juice, where did she go?
- Dudu collected apple and juice, where did she go?
- If Dudu has grapes and chips, where did she go?

Sign:
Date:

134 Position and direction: following direction

	A	B	C
1			
2			
3			

Give the grid location for:

- the cylinder
- the rectangular prism
- the pentagon
- the quadrilateral

1. Follow the instructions below. We have shown the first 3 moves.

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

Step 1: Start on J2. Go two blocks to the left. You will be on H2 now.
Step 2: Go two blocks down. You are in _____ now.
Step 3: Go five to the left. You are in _____ now.
Step 4: Go two up. You are in _____ now.
Step 5: Go two to the left. You are in _____ now.
Step 6: Go six down. You are in _____ now.
Step 7: Go five to the right. You are in _____ now.
Step 8: Go one down. You are in _____ now.
Step 9: Go five to the right. You are in _____ now.
Step 10: Go four up. You are in _____ now.
Step 11: Go five to the left. You are in _____ now.

2. Where are the objects?

	A	B	C	D
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

a. Plates ☐ d. Balloons ☐ g. Cooldrink ☐
b. Party hats ☐ e. Ice-cream ☐ h. Sweets ☐
c. Cup-cakes ☐ f. Party whistles ☐ i. Chips ☐

3. Describe the route taken by guests at a party. (Use the arrows to help you.)

Step 1: Start by collecting the party plate.

_____
_____
_____
_____
_____
_____
_____
_____

Make your own game

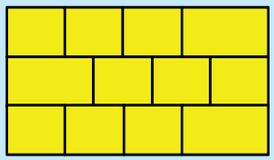
Design your own direction game on a grid.

Sign:
Date:

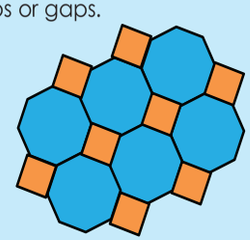
135 Tessellations

A **Tessellation** (or **Tiling**) is when you cover a surface with a pattern of flat shapes so that there are no overlaps or gaps.

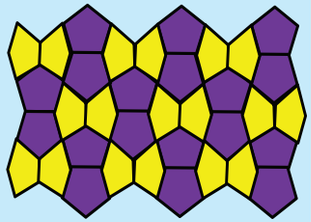
Examples:



rectangles



octagons and squares

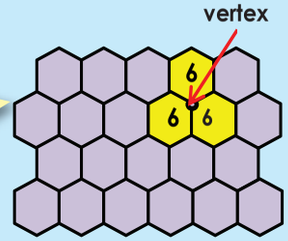


different pentagons

To name a tessellation, look at a vertex and count how many polygons are joined there. For each of these polygons, write down how many sides it has.

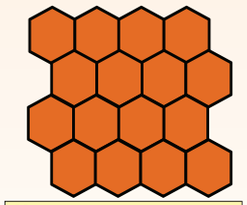
So, for example here there are 3 polygons joined at the vertex. They each have 6 sides. So you write 6.6.6.

So this is called a "6.6.6" tessellation.

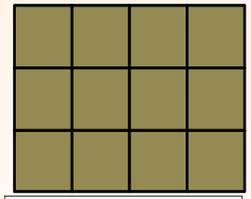


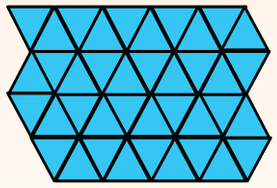
Regular Tessellations:
A **regular** tessellation is a pattern made by repeating a regular polygon.

1. There are only 3 regular tessellations: Describe each, we did one for you.

a. 

Hexagons
6.6.6

b. 

c. 

2. Which one of the following types of regular polygons cannot be used to make a regular tessellation? Circle the correct answer/s.

a. equilateral triangle b. square c. regular pentagons d. regular hexagons

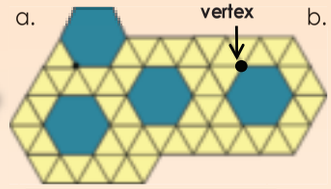
3. Which one of the following is not a regular tessellation?

a. 3.3.3.3.3.3 b. 4.4.4.4 c. 6.6.6 d. 8.8.8

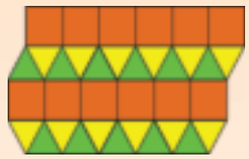
Semi-regular Tessellations:
A semi-**regular** tessellation is made of two or more regular polygons. **The pattern at each vertex must be the same!**

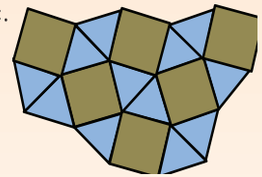
4. There are only 8 semi-regular tessellations. Name and describe them. We have done the first one for you.

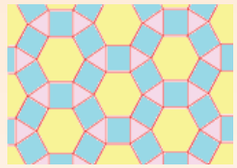
Here there are 5 polygons joined at the vertex. Four of them have 3 sides, one has 6 sides. So you write : 3.3.3.3.6 in order. You always start at the polygon with the least number of sides, so "3.3.3.3.6 not "6.3.3.3.3".

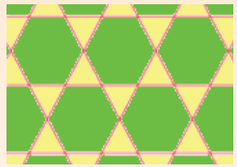
a. 

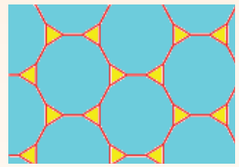
Hexagons and triangles
3.3.3.3.6

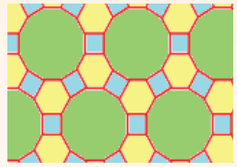
b. 

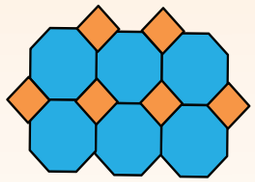
c. 

d. 

e. 

f. 

g. 

h. 

Sorting out tesselations

Circle the correct answer/s.

- **Which one of the following combinations cannot be used to make a semi-regular tessellation?**
- a. equilateral triangles and squares b. equilateral triangles and hexagons c. equilateral triangles and octagons d. equilateral triangles and dodecagons (regular 12-sided polygons)

Which one of the following is not a semi-regular tessellation?

a. 3.3.3.3.6 b. 3.4.6.3.4 c. 3.3.3.4.4 d. 3.3.4.3.4

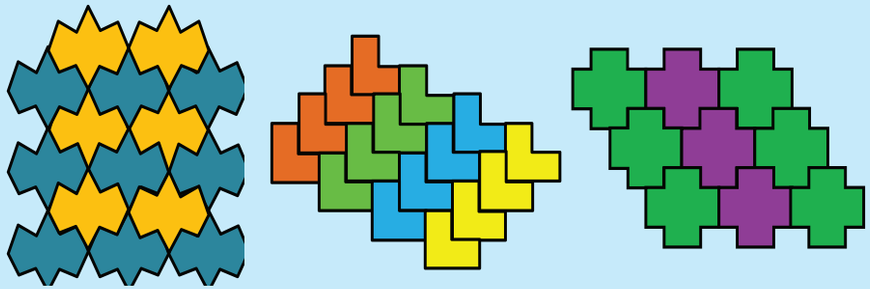
Sign:

Date:

Translation and tessellations

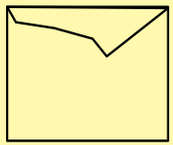
Translation

A translation is a shape that has simply been slid across the paper and drawn again in another place. The translation shows the geometric shape in the same alignment as the original; it does not turn or flip.

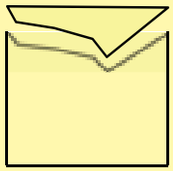


Practical activity

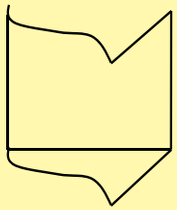
Trace the first pattern on a piece of paper. You can use recycled paper or newspaper.



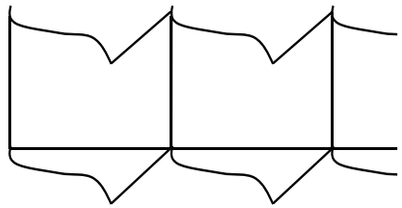
Cut the top part. We call this the 'nibble'.



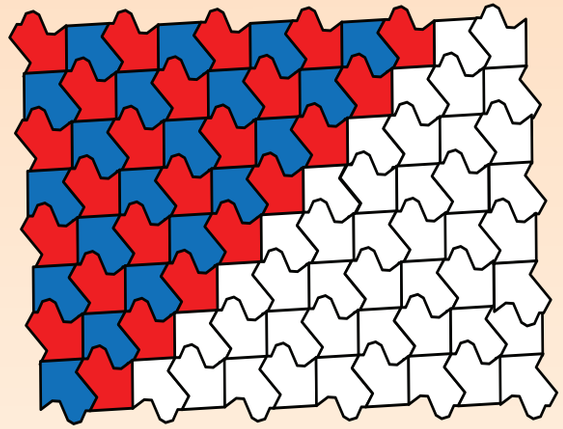
Past the nibble beneath the part you cut from.

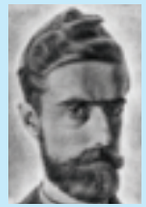


1. Use the pieces cut out on the left hand side, as a stencil, to create your own translation (slide) pattern.



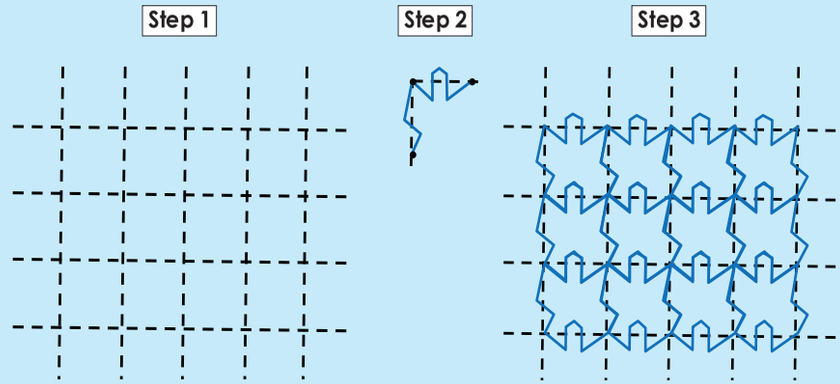
2. Complete the translation pattern by colouring it.





Maurits Cornelis Escher (1898-1972) is one of the world's most famous graphic artists. His art is enjoyed by millions of people all over the world, as can be seen on the many web sites on the internet.He is most famous for graphics such as transformation prints.

The simplest example of an Escher tessellation is based on a square. Start with a simple geometric pattern, like a square a square grid, and then change that square shape into another one that still fits more or less over the original square grid.



My own creation

Try one like this on a sheet of grid paper ..

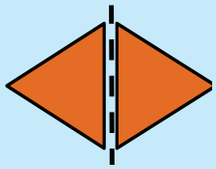
Sign:

Date:

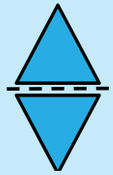
137 Reflections and tessellations

A reflection is a shape that has been flipped. They can be flipped directly to the left or right or flipped from the top or bottom.

Left to right flip.



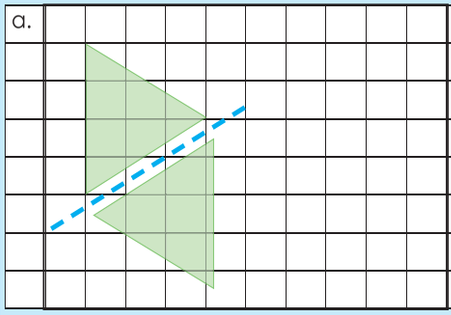
Top to bottom flip.



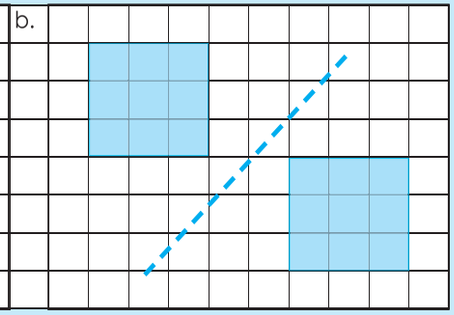
If a reflection has been done correctly, you can draw an imaginary line right through the middle, and the two parts will be symmetrical "mirror" images.

1. Are these lines of reflection? Why or why not?

a.

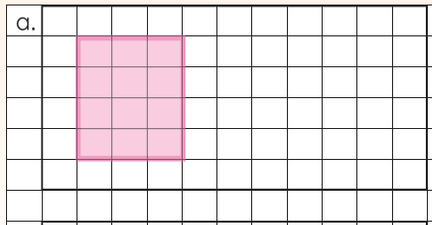


b.

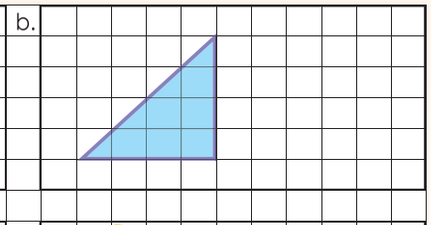


2. Draw the reflection of the shape and show the line of reflection.

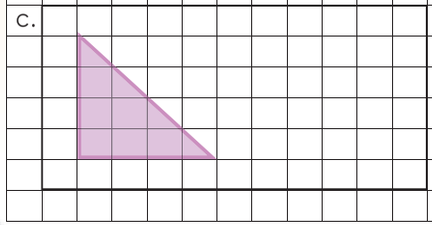
a.



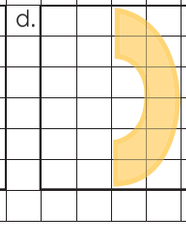
b.



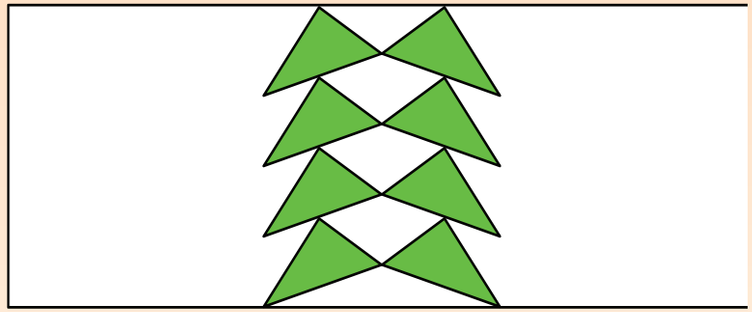
c.



d.

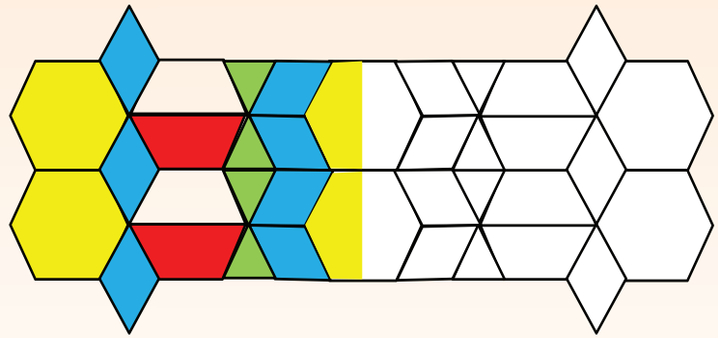


3. Here are examples of tessellations using reflection. Extend the pattern and describe it.



a. Describe why it is a reflection tessellation.

4. Complete this reflection tessellation.



a. Describe why it is a reflection tessellation.

Let's tesselate

Create your own tessellation pattern using reflection (flipping).

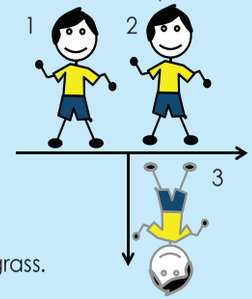
Sign:

Date:

138 Glide reflection

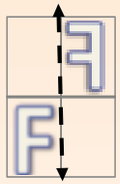
A translation and a reflection can be performed one after the other to produce a transformation known as a **glide reflection**.

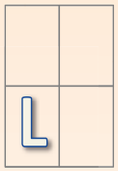
- The man is the **pre-image**.
- He was then **translated (slid)** to the right.
- He translated image was then **flipped** (top to bottom) over the reflection line.
- The third man is the reflected **image** of the man.
- This represents a glide reflection.

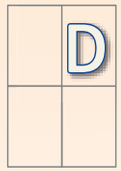


Go outside and do this glide reflection by lying on the grass.

1. Show glide reflection using letters of the alphabet.

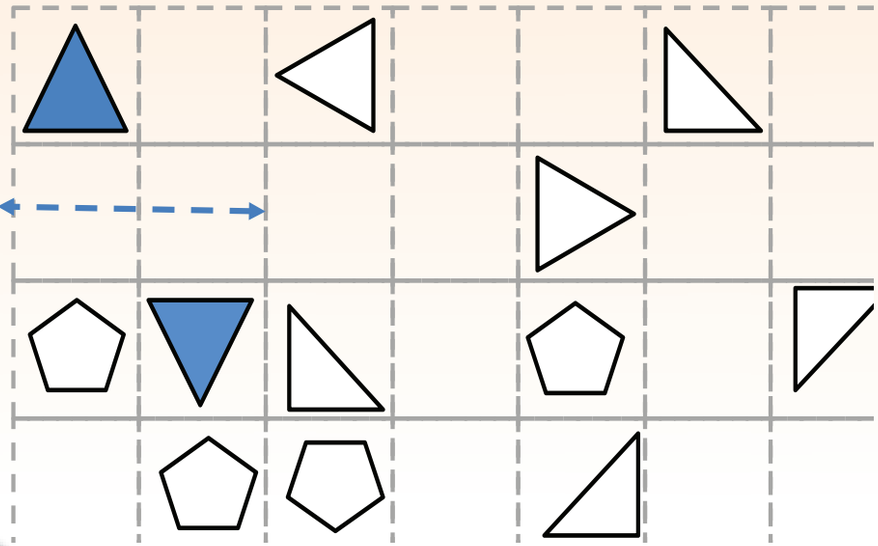
a. 

b. 

c. 

d. 

2. Colour the glide reflected image the same colour. We did the first one for you. Show the line of reflection in the same colour.



Practical activity

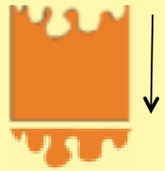
Cut a square from a piece of paper.



Copy this design on your square.



Cut the piece and slide (translate) it across to the opposite side of the square. Flip (reflect) the cut piece.



Flip (reflect) the cut piece.



Use this piece to create your own tessellation pattern.



3. Use the pieces cut out on the left hand side, as a stencil, to create your own tessellation pattern. Remember this pattern (tile) needs to be rotated or flipped as it is traced.

Create a reflection tile

Create your own slide reflection tile.

Sign:

Date:

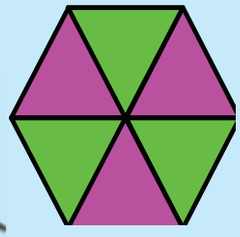
139 Rotations and tessellations

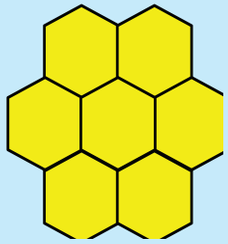
Rotation

Rotation is spinning the pattern around a point, rotating it. A rotation, or turn, occurs when an object is moved in a circular fashion around a central point which does not move.

A good example of a rotation is one "wing" of a pinwheel which turns around the centre point. Rotations always have a centre, and an angle of rotation.

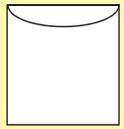




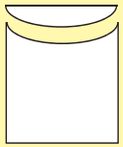


Practical activity

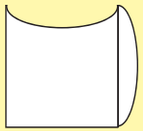
Trace the first pattern on a piece of paper.



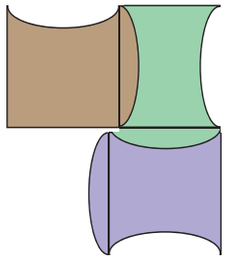
Cut the top part. We call this the 'nibble'.



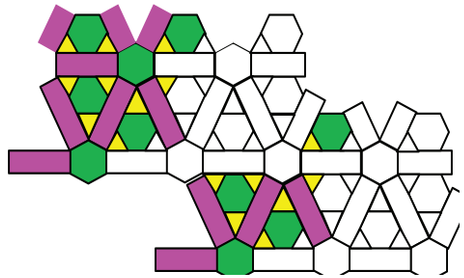
Paste the nibble on the right hand side of the part you cut off.



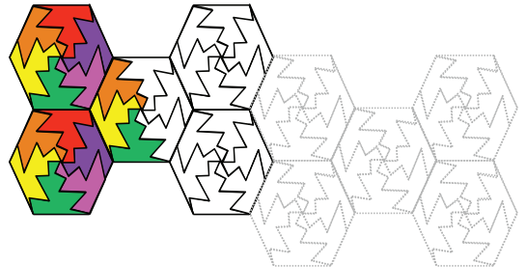
1. Use the pieces cut out on the left hand side, as a stencil, to create your own rotation pattern.



2. Complete and extend the rotational tessellation pattern.



3. Complete and extend the rotational tessellation pattern.



Do another tessellation

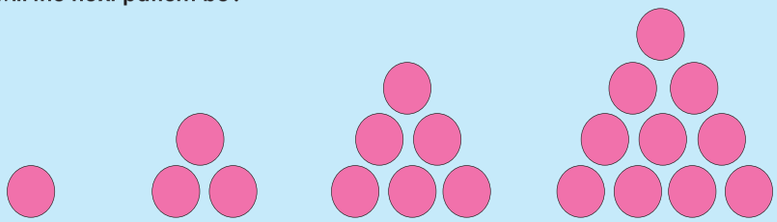
Create your own tessellation pattern using rotation.

Sign:

Date:

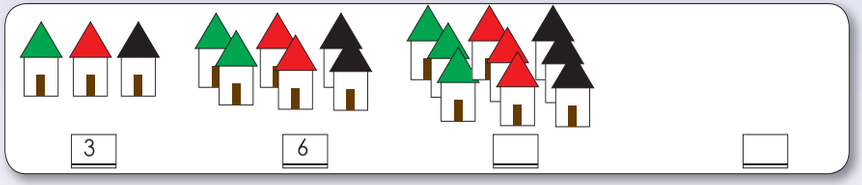
140 Geometric patterns

What will the next pattern be?

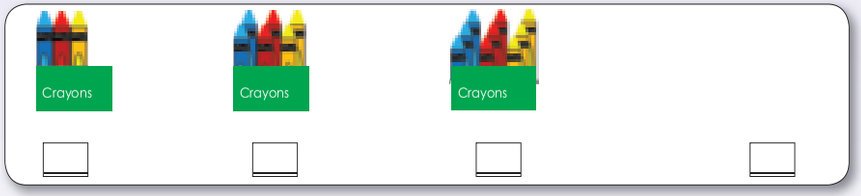


1. Write down the numbers in each pattern. Draw the next pattern:

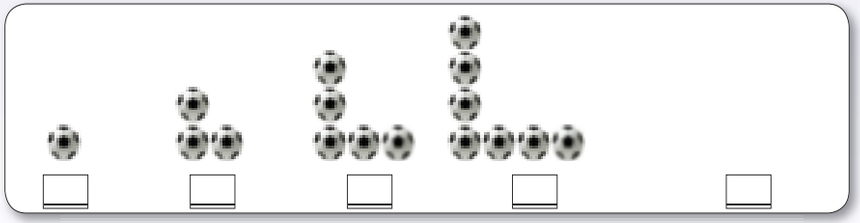
a.



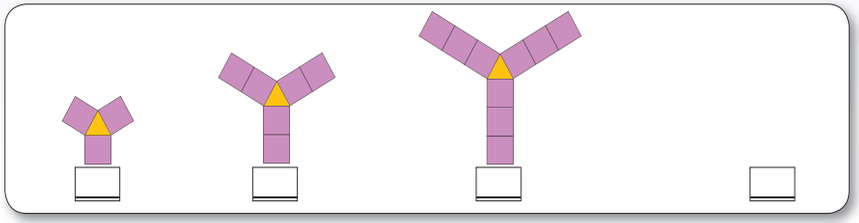
b.



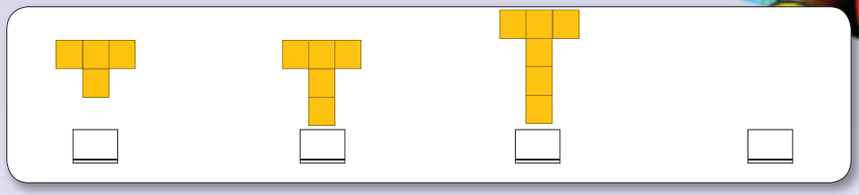
c.



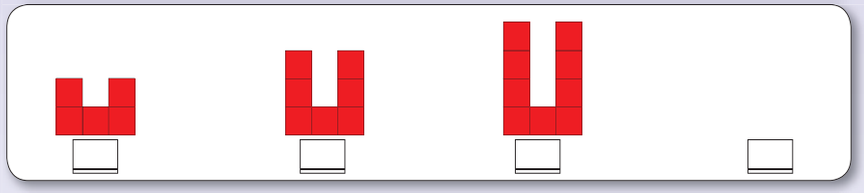
d.



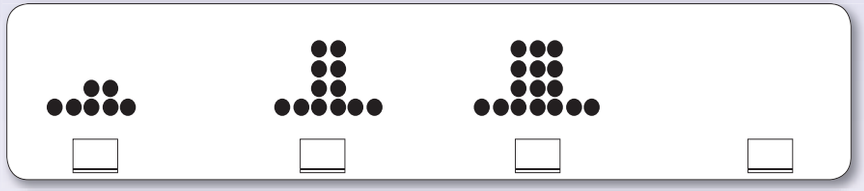
e.



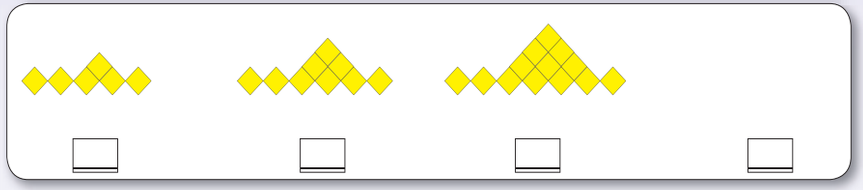
f.



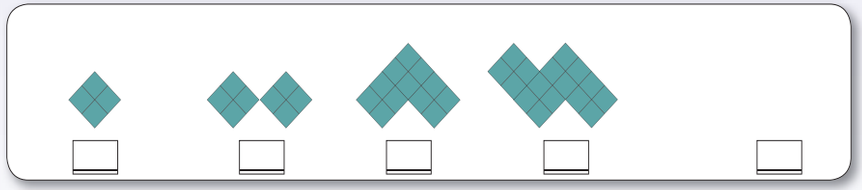
g.



h.



i.



Beautiful pattern ...

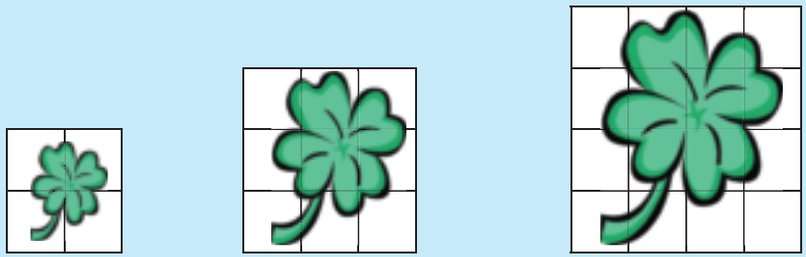
Look at the pattern below, design your own. Add an African touch.



Sign:

Date:

141a More geometric patterns



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

a.



Pattern	1	2	3	4	5	6	7	8	9	10
Dots	4	16								

b.



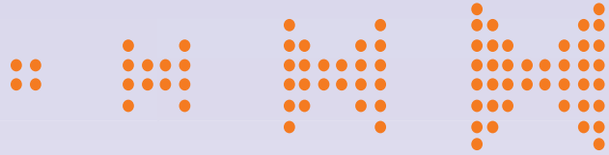
Pattern	1	2	3	4	5	6	7	8	9	10
Dots										

c.



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

d.



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

e.



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

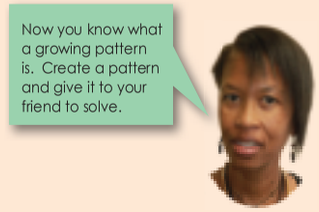
f.



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

My own pattern

Complete the pattern.

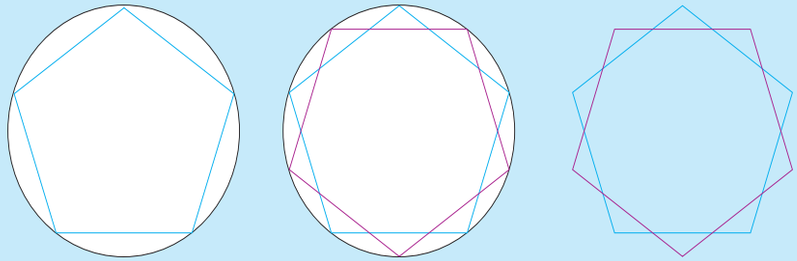


Sign:

Date:

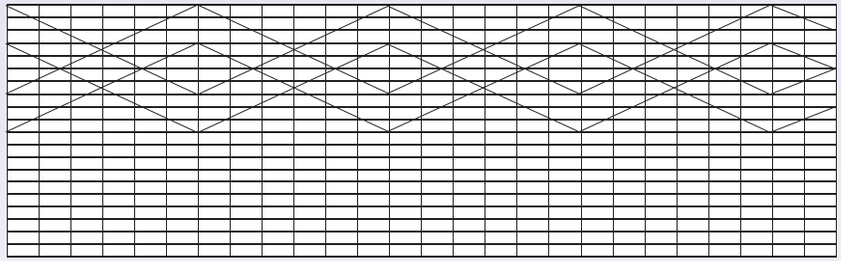
141b Even more geometric patterns

Explain the pattern.



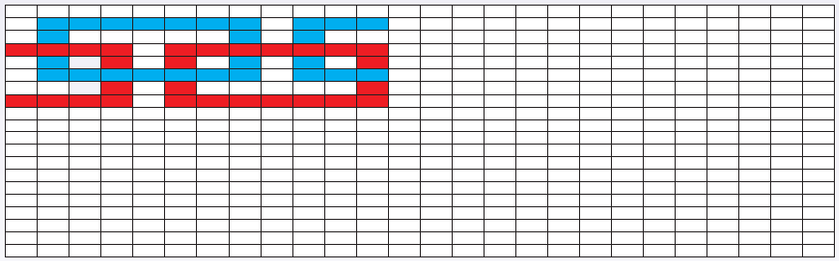
1. Copy the pattern.

a.

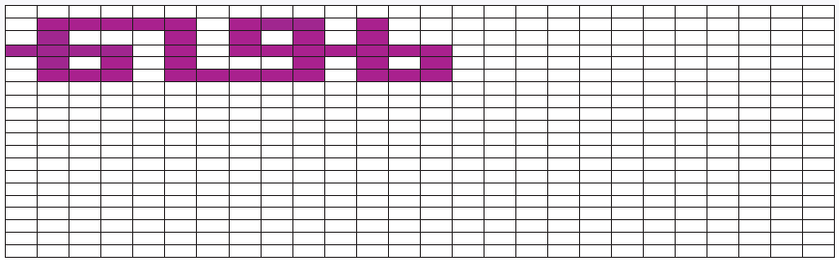


2. Extend and then copy the pattern.

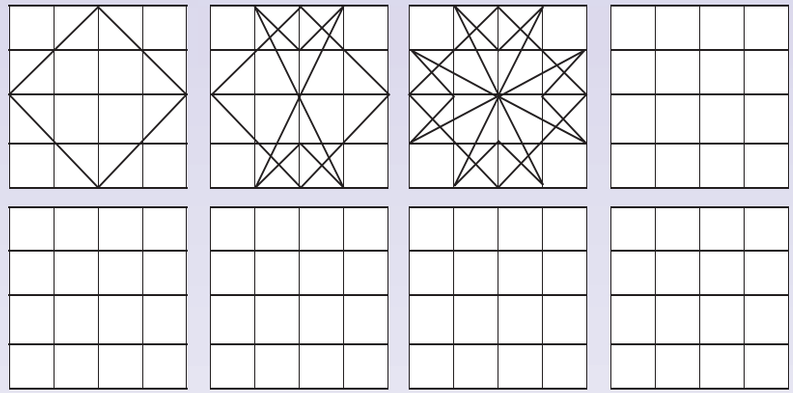
a.



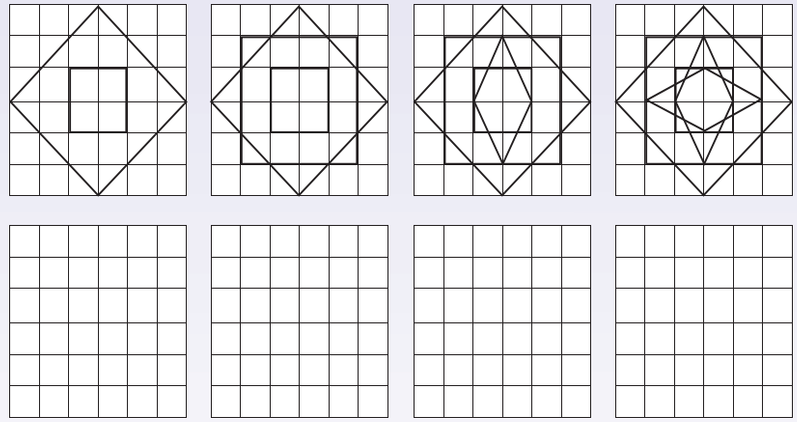
b.



3. Draw the next pattern in the top row. Then copy all the patterns.



4. Draw the next pattern in the top row. Then copy all the patterns.



Pattern copying

Copy the pattern.



Sign:

Date:

Properties of numbers

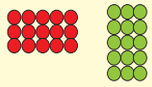
Quick recall. How fast can you answer the following?

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

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

a.	4 + 3 = 3 + 4	40 + 30 = 30 + 40	400 + 300 = 300 + 400
b.	6 + 5 = 5 + 6	60 + ☐ = 50 + 60	600 + 500 = 500 + ☐
c.	9 + 2 = 2 + ☐	90 + 20 = ☐ + 90	900 + ☐ = 200 + ☐
d.	7 + 1 = ☐ + 7	70 + ☐ = 10 + 70	700 + ☐ = 100 + 700
e.	4 + 8 = 8 + ☐	☐ + ☐ = ☐ + ☐	☐ + ☐ = ☐ + ☐

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

a.  3 x 5 = 5 x 3	b. 4 x 2 = 2 x 4
c. 7 x 1 = 1 x 7	d. 8 x 2 = 2 x 8
e. 6 x 3 = 3 x 6	f. 10 x 4 = 4 x 10

3. Complete the following:

a. 1 + (2 + 3) = (1 + 2) + ☐

1 + 5 = 3 + ☐

☐ = ☐

b. 4 + (5 + 2) = (4 + 5) + 2

☐ = ☐

☐ = ☐

c. 1 + (3 + 5) = (1 + 3) + 5

☐ = ☐

☐ = ☐

d. 5 + (2 + 3) = (5 + 2) + 3

☐ = ☐

☐ = ☐

e. 7 + (4 + 5) = (7 + 4) + 5

☐ = ☐

☐ = ☐

4. Complete the following:

a. 2 x (3 x 4) = (2 x 3) x 4

2 x 12 = 6 x ☐

☐ = ☐

b. 4 x (3 x 2) = (4 x 3) x 2

☐ = ☐

☐ = ☐

c. 1 x (3 x 6) = (1 x 3) x 6

☐ = ☐

☐ = ☐

d. 5 x (1 x 4) = (5 x 1) x 4

☐ = ☐

☐ = ☐

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

☐ = ☐

☐ = ☐

Play Sudoko

Fill in the empty small squares with numbers between 1 and 9. You can only use each number once in each full row and each full column. You can only use each number once in each coloured block

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

Sign:

Date:

143a Basic operations

Quick recall:

10 000 + 1 =	50 000 – 4 000 =	70 000 – 60 =
200 x 40 =	150 x 20 =	5 000 ÷ 5 =
70 000 – 600 =	40 000 + 9 =	100 x 60 =
6 400 ÷ 80 =	8 400 ÷ 70 =	5 600 ÷ 40 =
60 000 + 100 =	150 x 30 =	74 000 + 900 =

1. Work these out in your head.



a. 15 plus 19 _____

b. 7 multiplied by 6 _____

c. The sum of 21 and 16 _____

d. Divide 480 by 10 _____

e. The product of 30 and 5 _____

f. What is the remainder if 70 is divided by 6? _____

g. What is 50 less than 4 times a thousand? _____

2. Tick (✔) the correct answer.

a. Another word for addition is:
i. subtraction
ii. product
iii. plus

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

c. A hundred thousand has ____ zeros.
i. 4
ii. 5
iii. 6

d. A hundred thousand is a ____ digit number.
i. 5
ii. 6
iii. 7

e. The product of 10 and 100 is:
i. 110
ii. 1 000
iii. 90

f. When adding or subtracting, if a number ends with a 9, round it off to the next 10, and then take away or add ____.
i. 10
ii. 9
iii. 1

g. 42 r 3. The r stands for:
i. remainder
ii. number
iii. revision

h. Share R60 000 between two people:
i. R600
ii. R30 000
iii. R40 000

i. 89 rem 5. The rem stands for:
i. revision
ii. remainder
iii. number

j. Share 2 500 between 5:
i. 5
ii. 50
iii. 500

3. Calculate the following:

a. 150 ÷ 30 = _____

b. 120 ÷ 20 = _____

c. 180 ÷ 60 = _____

d. 140 ÷ 70 = _____

e. 210 ÷ 30 = _____

f. 240 ÷ 60 = _____

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. + − x ÷

a. 80 _____ 40 = 3 200

b. 50 000 _____ 200 = 50 200

c. 3 999 _____ 1 876 = 2 123

d. 300 _____ 30 = 10

e. 250 _____ 4 = 1 000

f. 9 999 _____ 9 999 =19 998

6. Fill in the correct symbol and number.

+ − x ÷

Start 1 000 ÷ 5 200 ____ 500 ____ 1 000 ____ 1 200

600 ____ 100 ____ 400 ____ 500 ____ 200

250 ____ 50 ____ 250 ____ 500 ____ 100 End

Sign:

Date:

continued ☛

143b Basic operations continued

7. Compare the three columns.

5 + 3 = 3 +	5 + 3 = 3 +	5 + 3 = 3 + x
8 x 9 – 9 x 	8 x 9 – 9 x	8 x 9 – 9 x x
2 + (3 + 5) = (2 + ) + 5	2 + (3 + 5) = (2 +) + 5	2 + (3 + 5) = (2 + x) + 5

8. Solve the following using the inspection method.

a. 36 +  = 40  =

b.  x 10 = 100  =

c.  ÷ 10 = 7  =

d.  – 123 = 123  =

e.  x 125 = 12 500  =

f.  + 2 365 = 3 000  =

9. Use the trial and improvement method to solve the following number sentences.

a. ____ x 34 = 850

b. 2 375 + ____ = 5 339

10. Use the substitution method to solve the following number sentences.

a. (37+ 56) x ____ = 837

b. (456 – 234) ÷ ____ = 37

11. Use any method to solve the following.

a. 7 384 – ____ = 2 726

b. ____ x 243 = 4 374

12. Circle the statements that are true.

a. 37 x 12 =

i. (30 +7) x (10 +2)
ii. (37 x 10) + (37 x 2)
iii. 30 + 7 x 10 + 2
iv. 37 x 10 x 2

b. 14 + ____ =

i. 14 + ____
ii. 14 x ____
iii. ____ + 14
iv. ____ – 14

c. 12 x 16 is more than 10 x 16. How much more?

i. 10
ii. 2
iii. 32
iv. 16

13. Which of the statements below are equivalent to?

a. 26 x (6 x 8) ?

i. (26 x 6) x 8
ii. 26 x 3 x 2 x 2 x 2 x 2
iii. (26 x 6) + (26 x 8)
iv. (10 – 2)(26 x 8)

b. (23 x 12) + (123 x 0) =

i. 286 + 123
ii. (23 x 12) x 0
iii. 276
iv. 0

c. 12 x (3 + 9)

i. (12 x 9) + (12 +3)
ii. 12 x 12
iii. 12 x 3 x 9
iv. 121

14. Write the number sentences for these story sums.

a. A man gives boxes of toys to a school. Each box has 548 toys. How many toys did the school receive? _____

b. A farmer shares 654 apples equally amongst 45 shops. How many does each shop get? _____

c. A man struggles to sell his farm house. He decreases the original price by R10 456. He sells his house for R85 787. What was the original price? _____

15. Write a story sum for the following number sentence.

a. 5 x 36 – 88 =

_____

b. 873 x 534 + 91 =

_____

Joint effort

Write a story sum and let your friend write the number sentence.

Sign:

Date:

Probability

Talk about these pictures.

Probability is how likely something is to happen.

Unlikely to happen



Likely to happen



1. Answer: Likely or unlikely to happen

a. I will drive a car one day. _____

b. I can stay awake for 4 days. _____

c. I will play with my dog this afternoon. _____

d. I will buy a house tomorrow. _____

e. I will go to Europe this holiday. _____

f. I will sit down today. _____

g. The sun will shine next week. _____

h. This summer it will snow. _____

i. I will listen to music today. _____

j. I will go to bed tonight. _____

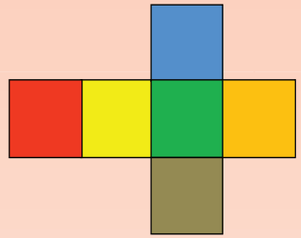
2. Something that is likely to happen to you today" and "Something that is not likely to happen to you today" respectively.

go to sleep	take a shower	move to England	eat breakfast
play in the pool	win the Lotto	play with friends	play soccer

Something that will **likely** happen to you today.

Something that will not **likely** happen to you today.

3. Use the dice from Cut-out 6 or make you own from Cut-out 7.



a. What colour do you like the most on the die? _____

b. What colour do you like the least on the die? _____

c. Ask your friend the same questions. What did she or he answer? _____

d. Roll the die. On what colour did it land? _____

e. Ask your friend to roll the die. 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? _____

4. Role the die 30 times and record your results in the table below, using tallies.

red	yellow	green	orange	blue	brown

5. What will happen if you use two dice? What is the probability of rolling a:

1?	2?	3?	4?	5?	6?

Ask your family

Ask your family to help you to complete the diagram below.



Sign:

Date:

