



Government of Vanuatu

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Central School Home School Package

Year : 7 MATHEMATICS










Ministry of Education and Training / Ministère de l'Éducation et de la Formation
Republic of Vanuatu / République du Vanuatu

HOME SCHOOL PACKAGE CONTENT

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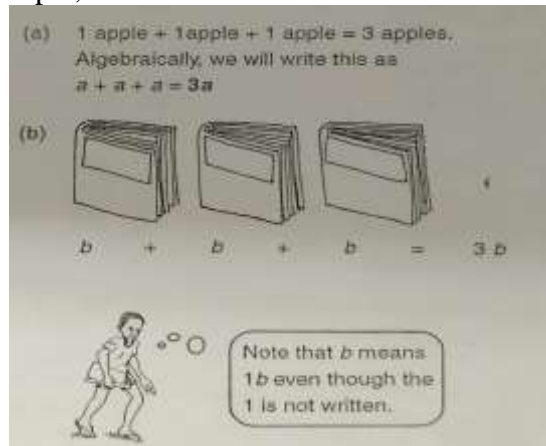
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Lesson activity 1:

 Teachers	Name : Mrs Homu and Miss Lishi Subject : MATHEMATICS
 Date	Week 6 : Monday 22nd June 2020 Tuesday 23rd June 2020
	Topic : ALGEBRA Lesson title: Letters for unknowns/ Adding and subtracting like terms.
 Learning outcomes	Students should be able to: <ul style="list-style-type: none"> - Use letters to identify different objects - Identify like terms - Add and subtract like terms - Multiply and divide expression
 Introduction	<p>In previous classes, you are usually asked to find the “missing number” by filling in the blank box. In algebra, these blank boxes can be replaced by “letters” from the alphabet.</p>
	
 Learners notes	<p>1. Letters for unknown</p> <p>Letters can be used to represent different object instead of their full names. For example, “a” for apple, “b” for baby, etc.</p> <p>It is not necessary to use the first letter in the name of the object. A different letter or more than one letter can be used.</p> <p>For example, ‘x’ for plane, ‘y’ for bus, ‘xy’ for taxi, etc.</p>

When there is more than one object, a number is placed in front of the letter or letters standing for the object.

For example,



2. Like terms

Terms that have exactly the same letters, regardless of the order, are called '**like terms**'.

Example 1: Which of these are like terms?

6a, 5b, 8a, 2c, 10h

Ans: 6a and 8a are like terms.

Example 2:

ab and *9ba* are like terms since they both have an 'a' and a 'b'.

a) Add and subtract like terms

- Like terms can be added or subtracted to simplify an expression. In algebra, this is known as **collecting like terms**.

Example 3: Simplify by collecting like terms:

1. $6b - b = 5b$ *remember: $b = 1b$

2. $2ab + 3ab = 5ab$

3. $3abc + 9bca = 12abc$

Note: in algebra, we usually write letters in a term in an alphabetical order.

- To simplify an expression with many terms, only add or subtract like terms.





Example 4:

Simplify the expression








$$2a + 3b + 5a + b$$

$$= (2a + 5a) + (3b + b) \quad (\text{collect the like terms})$$

$$= 7a + 4b \quad (\text{add the like terms})$$

	<p>Example: Write the following in index form:</p> <p>a) $b \times b \times b = b^3$</p> <p>b) $p \times q \times p \times q = p^2 \times q^2 = p^2 q^2$</p>
 Exercises	<p>Exercise 1.1</p> <p>1. Write these expression as single terms</p> <p>a) $a + a + a =$</p> <p>b) $q + q + q + q + q =$</p> <p>c) $kz + kz + 3kz =$</p> <p>2. Simplify by collecting like terms</p> <p>a) $7x + 3x$</p> <p>b) $4c + 5c + 7t + 4v + 3t$</p> <p>c) $21z + 14c - 7c + 16s - 4s$</p> <p>d) $24 + 5a - 6 - 2a - 3 + 7c$</p> <p>e) $17xyz + 17x + 15y - 5xzy - 3x$</p>
 Assignment	
 Assessment	<p>Quiz</p>
 References	<p>- <i>Mathematics Year 7, Book 2</i></p>

Lesson Activity 2

 Teacher	Name : Mrs Homu and Miss Lishi Subject : MATHEMATICS
 Date	Week 6 : Wednesday 24th June 2020
 	Topic : ALGEBRA Lesson Title: Multiplication and Division
 Learning outcomes	Students should be able to: <ul style="list-style-type: none"> - Multiply and divide numbers and letters - Write numbers using the index form
 Introduction	One of the basic skills in algebra is being able to add, subtract, multiply and divide numbers and letters !
 	Catch phrase for the lesson
 Learners notes	<p>1. Multiplication and division</p> <p>Products of numbers and letters can be simplified by removing the multiplication sign.</p> <p>Example 1: Simplify</p> <ol style="list-style-type: none"> 1. $5 \times a = 5a$ 2. $2 \times b \times c \times e = 2bce$ <p>Note: When we have $6 \div a$, this can be written as a fraction as $\frac{6}{a}$</p>

Example 2:

a) $ab \div c = \frac{ab}{c}$

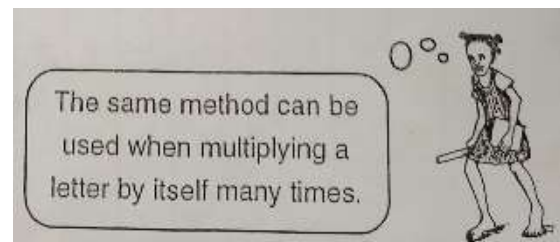
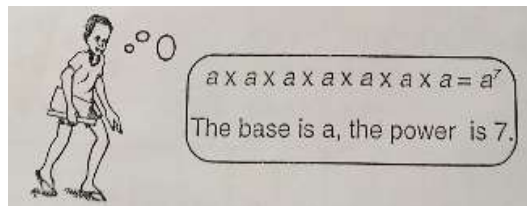
b) $10eg \div 3m = \frac{10eg}{3m}$

3. Indices

Indices: When a number is multiplied by itself many times it can be simplified by showing it as a power:

$$2 \times 2 \times 2 \times 2 \times 2 = 2^5$$

This is read as '2 to the power 5', where 2 is called the base and 5 is called the power or index.

**Example 3:** Write the following in index form:

a) $b \times b \times b = b^3$

b) $p \times q \times p \times q = p^2 \times q^2 = p^2 q^2$

**Exercise 2**

1. Simplify by writing the following without a multiplication sign

a) $3 \times y$

b) $7 \times a \times y \times b$

c) $2 \times n \times r \times m$

d) $21 \times t \times y$

2. Express the following as fractions

a) $y \div 4$

b) $ab \div cd$

c) $xyz \div 4$




d) $2x \div 5y$

3. Write the following in index form.








a) $a \times a \times a \times a \times a \times a \times a$

b) $y \times y \times y \times y$

c) $e \times e \times e \times f \times f$

	d) $3 \times m \times n \times m \times n \times n$ e) $r \times s \times r \times s \times r \times s$
 Assignment	
 Assessment	
 References	<i>Mathematics Year 7, Book 2</i>

Lesson Activity 3 :

 <p>Teacher</p>	<p>Name : Mrs Homu and Miss Lishi Subject : MATHEMATICS</p>
	<p>Week 6 Thursday 25th June 2020 Friday 26th June 2020</p>
	<p>Topic : ALGEBRA Lesson title: Substitution and decoding messages</p>
 <p>Learning outcomes</p>	<p>Students should be able to:</p> <ul style="list-style-type: none"> - Substitute and evaluate expressions - Use codes to decode messages. - Use number machines
 <p>Introduction</p>	<p>Messages can be decoded easily if a code is given. Codes are very useful and can be used to hide messages or send secret messages. Thus, substituting letters and numbers comes in very handy.</p>
	<p>Want to send a secret message? Use codes!</p>
 <p>Learners notes</p>	<p>1. Substitution</p> <p>Letters can be also be used to stand for numbers.</p> <p>Example 6: If $a=2$ and $b=3$, find the value or</p> <p>a) $a+b$ $Ans: 2+3$ $= 5$</p> <p>b) $5a-2b$ $Ans: 5 \times 2 - 2 \times 3$ $= 10 - 6$ $= 4$</p>

c) $2ab + 4$
 Ans: $2 \times 2 \times 3 + 4$
 $= 12 + 4$
 $= 16$

2. Decoding messages

Often messages are sent in secret codes, using letters and numbers.

Example:

Use the code below to decode the messages.

a	b	c	d	e	f	g	h	i	j	k	l	m
21	22	23	24	25	26	1	2	3	4	5	6	7
n	o	p	q	r	s	t	u	v	w	x	y	z
8	9	10	11	12	13	14	15	16	17	18	19	20

(a) 3 / 6, 3, 5, 25 / 24, 9, 3, 8, 1 / 13, 15, 7, 13.
 Answer: I like doing sums.

(b) 21, 6, 1, 25, 22, 12, 21 / 3, 13 / 26, 15, 8.
 Answer: Algebra is fun.

3. 'x' as a variable number machine

Number machines have different rules. When you put a number into a number machine, it is changed by the machine using its rule.

Example 6:

This is a 'Multiply by 2' machine.

The rule is:

In $\xrightarrow{\times 2}$ Out

What comes out if you put in:

(a) 4 (b) 0 (c) 12

Answer: 8 Answer: 0 Answer: 24

Example 7 :

Here is a chain of 2 machines.

In $\xrightarrow{+3} \xrightarrow{\times 2}$ Out

When we put in a 4, out comes 14.

4 $\xrightarrow{+3} \xrightarrow{\times 2}$ 14

What comes out when you put in:

(a) 3 (b) 11 (c) 25

Answer: 12 Answer: 28 Answer: 56



Exercises

Exercise 1.2

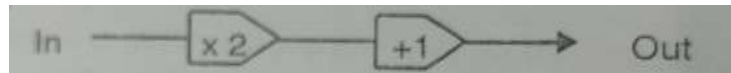
1. Use the code in the example

Exercise 1.6

Use the code in the example to decode the following messages:

- (a) 23, 9, 12, 8 / 3, 13 / 21, 7, 21, 20, 3, 8, 1.
- (b) 7, 21, 6, 21, 10, 9, 21 / 23, 9, 6, 6, 25, 1, 25 /
10, 12, 9, 24, 15, 23, 25, 13 / 23, 12, 3, 23, 5, 25, 14, 25, 12, 13.
- (c) 13, 23, 2, 9, 9, 6 / 21, 13 / 21 / 12, 15, 6, 25 / 2, 25, 6, 10, 13 /
19, 9, 15 / 8, 9, 14 / 14, 9 / 22, 25 / 21 / 26, 9, 9, 6.

1. Rule:



What comes out when you put in :

- a. 9
- b. 6
- c. 13
- d. 32

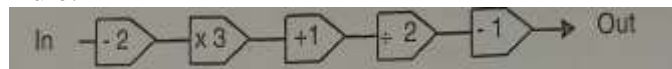
2. Rule



What comes out when you put in

- a. 6
- b. 15
- c. 29
- d. 38

3. Rule:



What comes out when you put in

- a. 3
- b. 7
- c. 13
- d. 27

- 4.

Here are four machines.

Which **two** do you need to use to give out

43 when you put in 6?

Draw the chain.

x 6

- 5



+ 5

x 8








- 5.



Assignment

 Assessment	
 References	<i>Mathematics Year 7, Book 2</i>

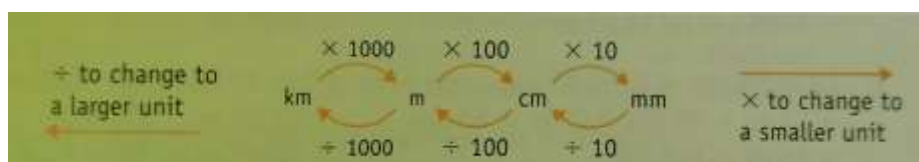
Lesson Activity 4 :

 <p>Teacher</p>	<p>Name : Mrs Homu and Miss Lishi Subject : MATHEMATICS</p>
	<p>Week 7 Monday 29th June, 2020 Tuesday 30th June, 2020</p>
	<p>Topic : MEASUREMENT Lesson Title: Lengths</p>
 <p>Learning outcomes</p>	<p>Students should be able to:</p> <ul style="list-style-type: none"> - Identify lengths - Convert units of lengths -
 <p>Introduction</p>	<p>The metric system is widely used when measuring objects and distances. It is important to know how to use the metric system and how to convert from one unit to another.</p>
	<p>Catch phrase for the lesson</p>
 <p>Learners notes</p>	<p>1. Metric system</p> <p>The meter is the basic unit for our measuring system called the Metric system. Length is measured using the following units:</p> <p style="text-align: center;">Millimetres – mm Centimetres – cm Metres – m Kilometres –km</p> <p>When small lengths are being measured (ei. Lines that can be drawn on the page), we usually give the answer in centimetres (cm) or millimetres (mm). For very large lengths (ie: distance from Port vila to Sydney), we use kilometres (km).</p>

How big is one meter? *It is approximately the distance from fingertip (when hand is outstretched) to opposite shoulder.*

How big is one kilometer? *It is approximately distance of a casual walk for 10 minutes.*

This chart will help you remember the conversions. These conversions are to be memorized.



To use the chart, start at the unit to be converted and follow the directions along the arrows until you arrive at the desired unit.

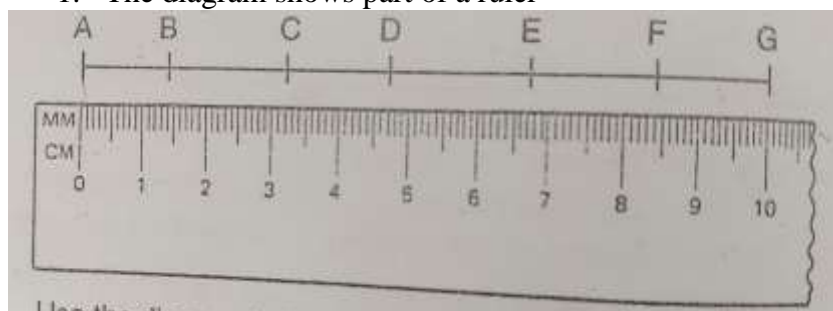
Example:

- a) $3 \text{ m} = 300 \text{ cm}$ (3×100)
- b) $6500 \text{ mm} = 6.5 \text{ m}$ (divide 6500 by 10 to get centimeter then divide again by 100 to get m)



Exercise 1.2

1. The diagram shows part of a ruler






Use the diagram to find the lengths:

- a) AB
- b) BF
- c) FG
- d) GC
- e) EB









2. Which unit would be the most suitable to measure the following?

- a) The length of your pencil
- b) The height of a coconut tree
- c) The height of your father
- d) The distance from Santo to Efate


3. Copy and complete


	a) 1 cm = mm b) 1 m = cm c) 2 m = mm d) 3000 m = km e) 3 km = m f) 4.5 km = m
 Assignment	
 Assessment	Quiz
 References	Maths 7, Book 2 (1998)

Lesson activity 5 :

 <p>Teachers</p>	<p>Name : Mrs Homu and Miss Lishi Subject : MATHEMATICS</p>
	<p>Week 7 : Wednesday 1st July, 2020 Thursday 2nd July, 2020</p>
	<p>Topic : MEASUREMENT Lesson Title: Estimating lengths</p>
 <p>Learning outcomes</p>	<p>Students should be able to:</p> <ul style="list-style-type: none"> - Estimate lengths of an object or distances -
 <p>Introduction</p>	<p>The metric system is a very useful tool in our daily activities. It is important to know how to estimate lengths!</p>
	<p>Everything is measureable!</p>
 <p>Learners notes</p>	<p><u>1. Estimating lengths</u></p> <p>In real life, we do not need to measure a length exactly. However, we make estimates of roughly how long a line is or approximately how far it is from one place to another.</p> <p>Example 1 Look at a needle. Estimate the length of the needle.</p>  <p>The needle is about 7cm.</p>

Example 2


Look at the length of the line AB if 

A  B

AB is approximately 5cm.

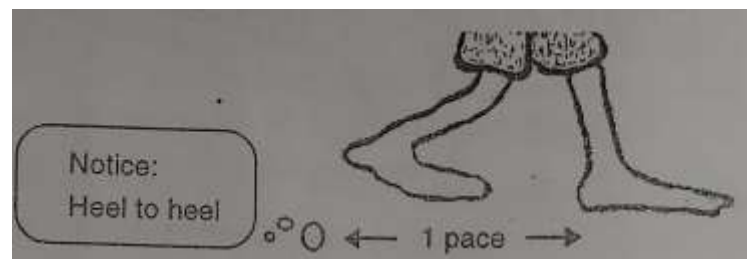
We write this as:

$AB \approx 5\text{cm}$



\approx means
is about
or approximately

To make estimates of distances that are longer, like the length of the classroom or the distance between the staffroom and main office, we can use our pace.



Use your normal pace. (Walk like you normally would.)

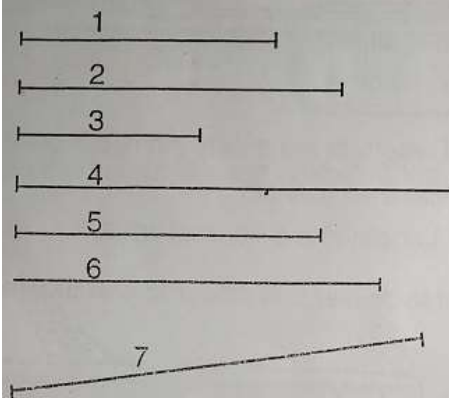


Exercise 2.2




1.

Copy the table.








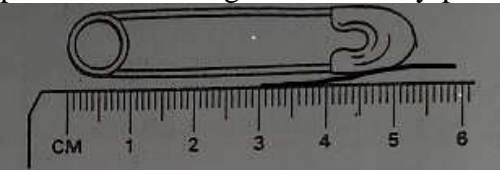
Fill in your estimates for the lines and then measure the exact length.



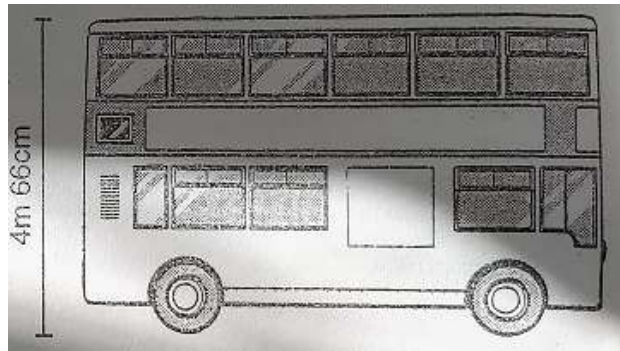
	Estimate	Exact	Error
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
15			
16			

 Assignment	
 Assessment	
 References	<p>Maths 7, Book 2 (1998)</p>

Lesson activity 6

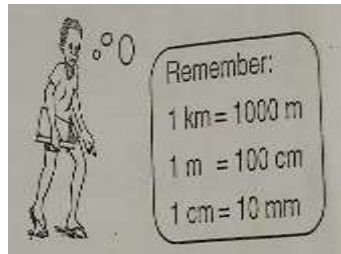
 <p>Teacher</p>	<p>Name : Mrs Homu and Miss Lishi Subject : MATHEMATICS</p>
	<p>Week 8 Monday 6th July, 2020 Tuesdat 7th July, 2020</p>
	<p>Topic : MEASUREMENT (LENGTH) Lesson Title: Rounding</p>
 <p>Learning outcomes</p>	<p>Students should be able to:</p> <ul style="list-style-type: none"> - Round off measurement - Convert a measurement to the given unit - Add lengths
 <p>Introduction</p>	<p>Rounding off lengths makes it much easier when we are dealing with decimal numbers.</p>
	<p>Rounding off makes life easier!</p>
 <p>Learners notes</p>	<p>1. Rounding</p> <p>When we measure lengths, we sometime give our answers to the nearest metre, centimeter, etc.</p> <p>Example 1: Look at the safety-pin. Write the length of the safety-pin to the nearest cm.</p>  <p>The actual length of the safety-pin is 5.3 cm and it is closer to 5 cm than to 6 cm. So, the length to the nearest cm is 5.</p>

Example 2: Is the double-decker bus closer to 4 m high or 5 m high?



Answer : 4m 66cm is closer to 5 metres than to 4 metres,
So: height of bus to the nearest m is 5.

2. Conversions



Example 1 :

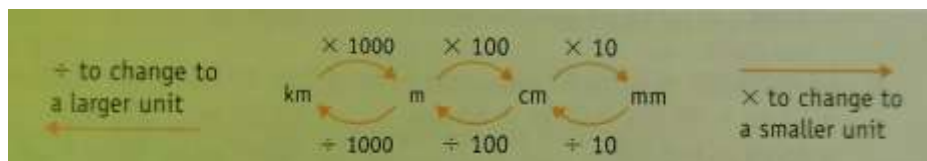
Change the following to the given unit.

a) 5m to cm

Ans: 5×100 (cm in a m)
= 500cm

b) 2m to mm

Ans: 2×100 (cm in a m)
 200×10 (mm in a cm)
= 2 000mm



c) 5000cm to m

Ans: $5000 \div 100 = 50$ m

3. Adding lengths

Example 2: Add the following lengths and simplify your answer:

a) 14m 29cm, 6m 15cm, 9m 84cm

Answer:

	14m	39cm
	6m	15cm
+	9m	84cm
	30 m	38cm

b) 3.425 km, 4.75 km, 2,12 km

Answer:


$$\begin{array}{r} 3.425 \\ 4.750 \\ + 2.120 \\ \hline 10.295 \text{ km} \end{array}$$

Remember to line up decimal points

Fill in with '0'

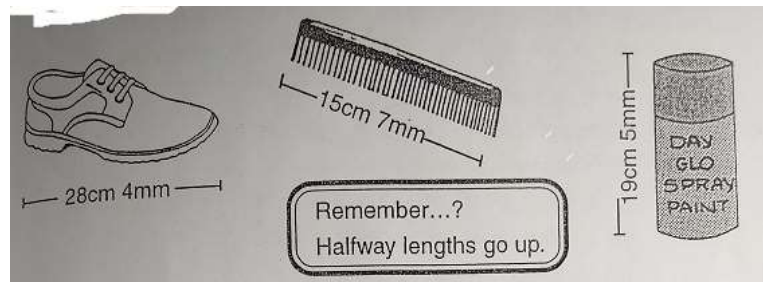
Remember 2.12 km = 2 km 120 m

0%

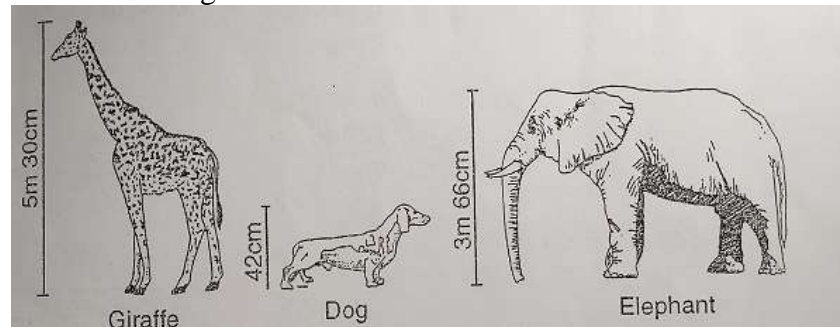



Exercise 2.2

1. Write these measurements to the nearest centimeter.



2. Write the height of each animal to the nearest metre.



3. Write the following measurements to the nearest cm:




- a) 5.3cm
- b) 15.4cm
- c) 20.5cm
- d) 66mm

4. Write the following to the nearest m:

- a) 5.89m
- b) 12.5m
- c) 150cm
- d) 87cm

5. How many millimetres are there in:

- a) 11cm
- b) 9cm 4mm
- c) 20.53m
- d) 6.5cm

	<p>6. How many centimetres are there in:</p> <p>a) 15m b) 3m24cm c) 20.53m d) 5.62cm</p> <p>7. Copy and complete the following</p> <p>a) 3km = m b) 13m = mm c) 29 000mm = m d) 6 500m= km e) 10.25km= m</p> <p>8. Add the following lengths and simplify your answer</p> <p>a) 9km 900m + 11km 118m + 9km 97m b) 69cm 4mm + 85cm 9mm + 66cm 8mm c) 75.19m + 965.45m + 53.1 m d) 2.51km + 3.25km + 8.996km</p>
 Assignment	
 Assessment	
 References	<p><i>Mathematics Year 7, Book 2</i></p>

WEEKLY CHECKLIST For Parents:

Term: 2 Week number 1 Date..... to..... Month:



Subject	Number of lessons	Days	Tick when activity is complete	Parents comment	Signature
	1				
	2				
	3				
	4				
	5				
	6				

Term: 2 Week number 2 Date..... to..... Month:

Subject	Number of lessons	Days	Tick when activity is complete	Parents comment	Signature
	1				
	2				
	3				
	4				
	5				
	6				

Term: 2 Week number 3 Date..... to..... Month:

Subject	Number of lessons	Days	Tick when activity is complete	Parents comment	Signature
	1				
	2				
	3				
	4				
	5				
	6				

Term: 2 Week number 4 Date..... to..... Month:

Subject	Number of lessons	Days	Tick when activity is complete	Parents comment	Signature
	1				
	2				
	3				
	4				
	5				
	6				

Term: 2 Week number 5 Date..... to..... Month:

Subject	Number of lessons	Days	Tick when activity is complete	Parents comment	Signature
	1				
	2				
	3				
	4				
	5				
	6				

Term: 2 Week number 6 Date..... to..... Month:

Subject	Number of lessons	Days	Tick when activity is complete	Parents comment	Signature
	1				
	2				
	3				
	4				
	5				
	6				

Term: 2 Week number 7 Date..... to..... Month:

Subject	Number of lessons	Days	Tick when activity is complete	Parents comment	Signature
	1				
	2				
	3				
	4				
	5				
	6				

Term: 2 Week number 8 Date..... to..... Month:

Subject	Number of lessons	Days	Tick when activity is complete	Parents comment	Signature
	1				
	2				
	3				
	4				
	5				
	6				

Term: 2 Week number 9 Date..... to..... Month:

Subject	Number of lessons	Days	Tick when activity is complete	Parents comment	Signature
	1				
	2				
	3				
	4				
	5				
	6				

Term: 2 Week number 10 Date..... to..... Month:

Subject	Number of lessons	Days	Tick when activity is complete	Parents comment	Signature
	1				
	2				
	3				
	4				
	5				
	6				

Term: 2 Week number 11 Date..... to..... Month:

Subject	Number of lessons	Days	Tick when activity is complete	Parents comment	Signature
	1				
	2				
	3				
	4				
	5				
	6				

Term: 2 Week number 12 Date..... to..... Month:

Subject	Number of lessons	Days	Tick when activity is complete	Parents comment	Signature
	1				
	2				
	3				
	4				
	5				
	6				

Term: 2 Week number 13 Date..... to..... Month:

Subject	Number of lessons	Days	Tick when activity is complete	Parents comment	Signature
	1				
	2				
	3				
	4				
	5				
	6				