

Mathematics Curriculum Guide: Grade 5

Contents

Acknowledgements

Introduction: *Generic*

Introduction: *Specific to Mathematics*

Term 1

Summary Term 1

Term 1 Unit 1: On the Beach	Number	2 weeks
Term 1 Unit 2: Out of the Box	Geometry	1 week
Term 1 Unit 3: Helping Mummy	Measurement	2 weeks
Term 1 Unit 4: On the Beach	Number	3 - 4 weeks
Term 1 Unit 5: Going Shopping	Statistics	1 week
Term 1 Unit 6: Helping Mummy	Measurement	2 weeks

Term 2

Summary Term 2

Term 2 Unit 1: On the Beach	Number	3 weeks
Term 2 Unit 2: Out of the Box	Geometry	1 - 2 weeks
Term 2 Unit 3: Helping Mummy	Measurement	1 week
Term 2 Unit 4: My Favourite Things	Patterns	1 - 2 weeks
Term 2 Unit 5: On the Beach	Number	2 weeks
Term 2 Unit 6: Helping Mummy	Measurement	1 week

Term 3

Summary Term 3

Term 3 Unit 1: On the Beach	Number	1 - 2 weeks
-----------------------------	--------	-------------

Term 3 Unit 2: Helping Mummy	Measurement	1 week
Term 3 Unit 3: Going Shopping	Statistics	1 - 2 weeks
Term 3 Unit 4: My Favourite Things	Patterns	1 - 2 weeks
Term 3 Unit 5: On the Beach	Number	2 weeks
Term 3 Unit 6: Helping Mummy	Measurement	2 weeks

Exemplary Lesson Plan Term 1

Exemplary Lesson Plan Term 2

Exemplary Lesson Plan Term 3

References

ACKNOWLEDGEMENTS

Developing curriculum material for our students to experience meaningful learning on the pursuit for mathematics education in school is a work that involves contribution by certain persons and institutions. While space will not allow for mentioning every contributor explicitly, one cannot avoid listing the following names.

Player	Field/School
Lindsay Howard	Curriculum Consultant under the DIFD Project
Martha Carbon	Teacher/Woodford Hill Primary
Sylma Moses	Teacher/Goodwill Primary
Junior Drigo	Teacher/Giraudel Primary
Allie Walter	Teacher/Grand Bay Primary
Tricia Tavernier	Teacher/Convent Prep
Joycelyn Panthier	Teacher/Roseau Primary
Matsuyo Utsunomiya	Japanese UN Volunteer/Curriculum Unit
Sariah Robin	North East Comprehensive
Mark George	Portsmouth Secondary

Simon Sharplis
Mathematics Education Officer

Introduction: Specific to Mathematics

Definition

The question as to what is mathematics arises when we seek to understand the bases/roots of our human activities.

Mathematics can well be regarded as the foundation stone of many of our human activities. Mathematics deals with a collection of objects which includes points, lines, numbers and events all of which are basic notions in our thinking. The concern is not so much with the objects themselves as with the relationships and patterns they show.

The study of mathematics involves observing, discovering and investigating patterns and relationships especially as illustrated and modelled in the real world.

Purpose of Mathematics for life in our world

It provides the capacity to

- Think in precise terms
- Develop (process/problem solving) skills, that are needed for:
 - Making connections
 - Reasoning
 - Communicating
 - Problem solving

- Have confidence in building or interpreting quantitative descriptions

Contribution of Mathematics to the Curriculum

Mathematics provides a foundation for productive discourse especially in the sciences and to some extent in the humanities.

It offers fuel for:

- Creativity
- Originality
- Imagination

The Subject Strands:

- Number
- Geometry
- Measurement
- Statistics and data handling
- Patterns, functions and algebra

Integration

Across subjects

Mathematics concepts can be integrated into almost all other subjects of the national Curriculum and conversely mathematics can integrate concepts, skills and attitudes of other subjects. For example:

- Social Studies and HFLE: Social issues and trends that form the basis of life can provide the raw data needed for Statistics/Data Handling.
- In mathematics, students learn to estimate and make accurate measurements which are skills required to engage in learning experiences in Science. Measuring time is a life skill integrated into all subjects.
- Mathematics has its own vocabulary and mathematical literacy needs to be acquired in the early grades. This reinforces and consolidates the learning in Language Arts.
- Mathematics is about problem solving, mathematics contributes to the development of life skills and the holistic development of the learner.

Thematic Integration

It is possible to use a thematic approach to integrate across and within subject areas. For example, Nature provides opportunities for thematic integration not only across strands in mathematics but across other subjects.

TERM 1 SUMMARY	
UNITS	No. of SESSIONS
UNIT 1: ON THE BEACH AT1: LO 1 Success Criteria: 1- 4	18
UNIT 2: Out of the Box AT 2: LO 1 Success criteria: 1 - 2	8
UNIT 3: Helping Mummy AT 3: LO 1 Success criteria: 1 - 3	16
UNIT 4 : On the Beach AT 1: LO 2 Success criteria: 1 - 7	30
Unit 5: Going Shopping AT4: LO 1 Success criteria: 1 - 4	8
Unit 6: Helping Mummy AT 3: LO 2 Success criteria: 1 - 3	16

UNIT PLAN WITH SUGGESTED TEACHING, LEARNING & ASSESSMENT ACTIVITIES

TERM 1 STRAND 1 Number UNIT 1: ON THE BEACH

AT 1	LO 1: Demonstrate an understanding of number up to 100 000 <i>Success Criteria</i>
-------------	--

1. Identify, use and write numbers up to 100 000 and represent them in a variety of ways.
2. Compare and order numbers in a variety of ways and create simple problems based on comparisons.
3. Use a calculator, pen and paper procedure or mental strategies to investigate number patterns and relationships.
4. Create and solve problems involving whole number concepts.

ACTIVITIES

Identify, use and write numbers up to 100 000 and represent them in a number of ways

- 1.1 Students asked to imagine that we count the clouds on a particular day and find that their number is 100, 000. This number such and such Anna, a Grade 5 student, who suggests that one representation is 100×1000 . Is Anna correct? Are there other representations?
- 1.2 Students observe as a place value chart is drawn on the chalkboard. Numbers are placed into the chart and students are helped to say the numbers aloud. A number is said and a volunteer is asked to come up and write it in the chart.

Hund. Thous	Tens Thous	Thous	Hund.	Tens	Ones
7	1	4	2	2	6

- 1.3 Students work in pairs. Each pair is given a set of up to 6 cards with a mixture of digits. They are asked to make the smallest/ largest number they can. Students read the number. They write as many numbers as they can make using the cards.

- 1.4 Students play the game teacup and saucer using cards. The number names are written on cards and numbers are written on cards. Students score a point whenever they match a number to a number card: e.g.

32761

Thirty two thousand seven hundred and sixty one

Compare and order numbers in a variety of ways and create simple problems based on comparisons

- 2.1 Students are shown two numbers, such as 563201 and 265981 and asked if they can tell, just by looking at the numbers, which is higher up or farther ahead on the number line. In the ensuing discussion, students are reminded that in a 6-digit number the largest place value is hundred thousand place. When we compare the numbers 563201 and 265981 we compare the digits in the hundred thousand place value first. Students are asked to observe the two pairs 563201, 265981 and 265981, 563201 and suggest in which of the two pairs the smaller number appears first.
- 2.2 Students are introduced to the signs $>$ (which means 'greater than') and $<$ (which means 'less than'). They are exposed to illustrations, such as $663201 > 265981$ and $265981 < 663201$. They are cautioned that the side that is open should face the larger number.
- 2.3 Students are shown two numbers such as 463025 and 415681 and asked which is greater. In the ensuing discussion they are guided to realise that when the digits in the hundred thousand are the same, look at the next digit, and so on. Emphasize that a number with more digits is always greater than another with less digits.
- 2.4 Students are given number cards, as illustrated below. They order the cards from smallest to largest and vice versa.

23561

693115

60159

668421

601911

601267

- 2.5 Students are given objects as illustrated below. They make the largest possible number, the smallest possible number, any three other numbers and order the resulting numbers from smallest to largest.

6

4

0

9

2

7

- 2.6 Students are provided with situations that they proceed to use to create problems. Example: Given that in a mango-gathering exercise, Joan gathered 547321, Ruth gathered 52155, Cody gathered 532641 and Chris, 533146,

students pose questions on the numbers gathered. One student might claim, for example, that the number Chris gathered is less than what Cody gathered. And the claim is then examined to see whether it is true or false.

Use a calculator, pen and paper procedure or mental strategies to investigate number patterns to investigate number patterns and relationships

- 3.1 Students are given a class session on the use of calculators. They are exposed to a demonstration on how to enter calculations, advised of common errors, like omitting a key, a digit or transposing two digits. Emphasize the need to be alert as if they key in the wrong piece of information they will get the wrong answer.
- 3.2 Students are asked to generate a number sequence using a calculator. They need to think of a start number and then choose a constant difference to go up or down in. Enter the start number followed by + or - then =. By continually pressing the = key the sequence can be generated. Students use their calculators to generate the first ten terms of the sequence that starts with 23 and goes to 47.
- 3.3 Students are put in two groups. Each group is given 4 questions. One group works with their calculator and the other without. The group that finishes first gets a point. The groups change position and the game continues.
- 3.4 Students are grouped and given speed tests where they use their pen and paper to calculate the answers.
- 3.5 Students are given puzzle.
 - a) I contain 12 hundreds, 16 tens, 8 ones. Who am I?
 - b) I contain 150 hundreds, 40 tens and 6 ones. Who am I?

Create and solve problems involving whole number concepts

- 4.1 Students are reminded of the various steps involved in problem solving. Reading, understanding, identify a strategy, work it out, look back. A few examples are done together. Students are given a few to done on their own. Example: Jane picked 56354 oranges on Monday. On Tuesday he picked 36402 more. How many did he pick on both days?
- 4.2 Students work in groups and asked to create word problems using 5 digit numbers.

RESOURCES

Place value chart, cards

ASSESSMENT

1. Posed with a problem such as that of writing the largest number less than 70 000 which begins and ends with 7, the student can solve the problem.
2. Can complete a table such as the one below

Number	number name
26354	
	six hundred and fifty-five thousand
	thirty-five thousand two hundred and ones
738264	
5863	

3. Can solve problems by completing statements such as the following
 - a. $800 \text{ tens} + 80 \text{ ones} = \underline{\hspace{2cm}}$
 - b. $60 \text{ thousands} + 75 \text{ hundreds} + 32 \text{ tens} = \underline{\hspace{2cm}}$
 - c. $26\,532 = \underline{\hspace{1cm}} \text{ thousands} + \underline{\hspace{1cm}} \text{ ones}$
 - d. $32951 = \underline{\hspace{1cm}} \text{ hundreds} + \underline{\hspace{1cm}} \text{ tens} + \underline{\hspace{1cm}} \text{ ones}$
4. Can circle the largest number
 - a. 29743 29734 29473
 - b. 19 909 19 900 19 990
5. Can circle the smallest
 - a. 9 011 9 111 9 001
 - b. 703 688 703 868 706 688

6. Given some number as illustrated, student can
- i. arrange the digits to make the highest number.
 - ii. write the number in words
 - iii. make the smallest number using the same digits
 - iv. write the number in words.

0 2 4 5 5 6

TERM 1 STRAND 2 Geometry UNIT 2: OUT OF THE BOX

AT 2	LO 1: Investigate the nets of regular 3-D shapes <i>Success Criteria</i>
-------------	--

1. Take apart simple boxes (cuboids) and cylinders to find their nets.
2. Investigate different nets that will form cubes.

ACTIVITIES

Take apart simple boxes (cuboids) and cylinders to find their nets

1.1 Students

1.2 Studen

Investigate different nets that will form cubes

2.1 St

2.2 St

RESOURCES

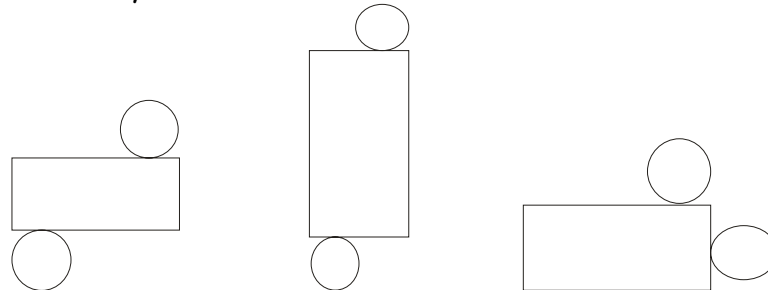
3 D shapes, empty cartoons e.g. match boxes, empty cans, paper, scissors, glue, tape

ASSESSMENT

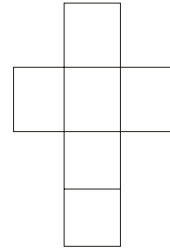
7. Complete the table

shape	on. of faces	no. of edges	no. Of vertices
cylinder			
cuboid			
cube			

8. Colour only the nets of cylinders



9. Show two other ways a net of a cube can be represented



10. Draw the net of a cuboid

TERM 1 STRAND 3 Measurement UNIT 3: HELPING MUMMY

AT 3	LO 1: Create and solve problems using different units of length
-------------	--

Success Criteria

1. Create and solve problems involving cm, m and km.
2. Estimate, measure and record lengths, heights and distances using cm and m.
3. Create and solve real life problems involving perimeter.

ACTIVITIES

Create and solve problems involving cm, m and km

1.1 Stude

1.2 Stude

Estimate, measure and record lengths, heights and distances using cm and m

2.1 Stu

2.2 Stud

Create and solve real life problems involving perimeter

- 3.1 Stu
- 3.2 stu

RESOURCES

Metre rule, tapeline, meter sticks, classroom, objects in classroom, school environment, students, rulers

ASSESSMENT

1. Can work out the answer for each of the following.
 - a. Susan is 1 m tall. What is the height of her sister who is $5\frac{1}{2}$ cm taller?
 - b. From a ball of string, 20 pieces, each $1\frac{1}{2}$ m long, are cut. If 30 m remain, how much string was there at first?
 - c. A boy walks round a garden which is 120 m long and 40 m wide. How much short of $\frac{1}{2}$ km has he walked?
 - d. The distance around a running track is 400 m. How far does the runner travel in making 6 laps?
 - e. A piece of chalk measures 8 cm. How many pieces will Jan need in order to match the length of the 4 m chalkboard?
2. Which unit of measurement would you use for the following objects?

Length	Unit of measurement
length of a pen	
length of school yard	
height of a man	
length of a match box	
length of the classroom	
length of Dominica's coastline	
Length of St. Lucia's coastline	

AT 1 | LO 2: Create and solve problems involving simple properties of numbers

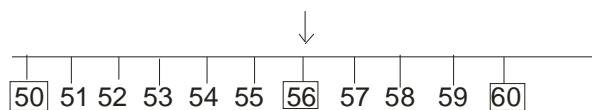
Success Criteria

1. Round off numbers with up to three digits to the nearest ten or hundred.
2. Find the place value of any number up to 5-digits.
3. Write 2, 3, 4 or 5-digit numbers in expanded forms.
4. Create and solve problems involving place value.
5. Play games and carry out simple investigations involving number concepts such as odd, even, factor, multiple, composite.

ACTIVITIES

Round off numbers with up to three digits to the nearest ten or hundred

- 1.1 Students are related a story in which someone was sharing out talents among three persons. One person got 50. Another got 56 and a third got 60. This is followed by a demonstration with three students each holding a number card showing 50, 56 or 60. The students take positions on a number line drawn on the classroom floor; or the number line may be drawn on the board.



Students asked to consider number 56. Students asked to say which tens 56 is closer to. What can you say about its relation to 50 and 60? How is it related to 50 and 60? It is between 50 and 60. It is closer to 60 than 50. Students asked to recall how to round off 56 to the nearest 10. They are led to say when it is rounded off to the nearest 10, we get 60.

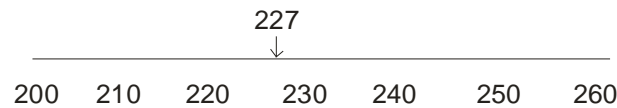
Students are asked, 'Which other number between 50 and 60 shall we try to round off to the nearest ten?' They give suggestions and are engaged in rounding these off.

- 1.2 Students are told a story in which two teams were engaged in a cricket match. In its first inning, one team scored 241. Students asked to consider the relation of this number to 200 and 300. How is it related to 200 and 300? It is between 200 and 300. It is closer to 200 than 300. Students asked, "How can we check?"

- a. What do you take (subtract) from 241 to get 200?
- b. What do you add to 241 to get 300?
- c. Which is less, 41 or 59?

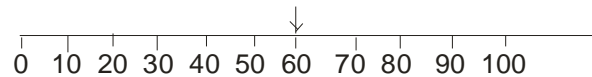
Therefore, when 241 is rounded off to the nearest hundred, we get 200. Students are asked, 'Which other number between 200 and 300 shall we try to round off to the nearest hundred?' They give suggestions and are engaged in rounding these off.

1.3 Students observe as the teacher draws the following number line on the board.



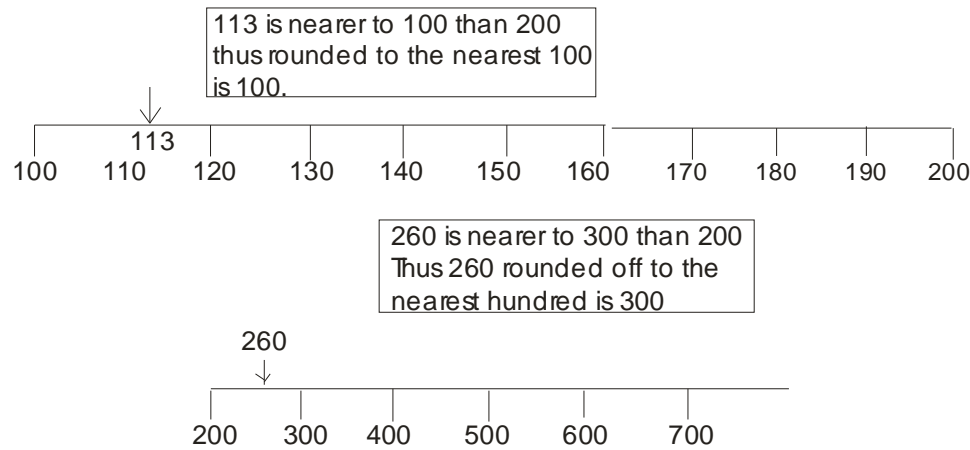
By teacher questioning, students are led to reveal that the closest tens to 227 are 220 and 230. It is indicated that with reference to the midway between 220 and 230, 227 is closer to 230. Thus when 227 is rounded to the nearest ten, we get 230.

1.4 Students observe as the following number line appears.



By teacher questioning, they are led to see that for a number between 0 and 100, rounding it off to the nearest 100 would mean we get 100 if the number is closer to 100 than 0. We get 0 if the number is closer to 0 than 100. Through teacher-led discussion, students are led to see that this means when 60 is rounded off to the nearest hundred, we get 100. And when 40 is rounded off to the nearest hundred, we get 0.

1.5 With the use of number lines as illustrated below, students are led to explain that when we want to round off a number to the nearest 100, we identify the nearest hundred to that number. Example 230 is closer to 200 than 300. They are led to highlight that in instances where a number is exactly midway between 2 numbers, it is rounded off to the larger number.



Find the place value of any number up to 5-digits

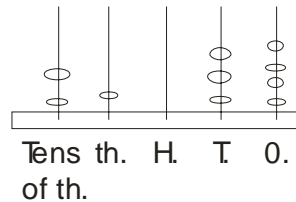
2.1 Students are reminded that 'place value' refers to the position of a digit, which determines the value of the digit. They are referred to a place value chart, as illustrated below.

Tens of Th.	Th.	H	T	O
8	9	3	4	5

5	stands for	5 ones
4	"	" 4 tens
3	"	" 3 hundreds
9	"	" 9 thousands
8	"	" 8 tens of thousand

They are questioned to reveal the position of each digit and its value. They reveal, for example, that 5 is in the ones place and its value is 5; that 4 is in the tens place and its value is 40. They are led to realise that the number 89, 345 is actually the sum of the values of the various digits. Check: $5 + 40 + 300 + 9\ 000 + 80\ 000 = 89\ 345$

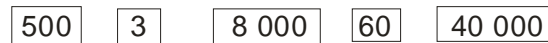
2.2 Students are referred to an abacus, as illustrated below. They are asked to write the value represented by the picture.



Students are questioned to reveal the value of the 7 in each of these numbers: (a) 87, (b) 8070, (c) 75809

Write 2, 3, 4 or 5-digit numbers in expanded forms

3.1 Students are grouped and each group is given work cards, as exemplified below.



Students proceed to form a number with these cards. They are engaged in completing statements such as:

i. $3\ 000 + 200 + 80 + 6 = \underline{\hspace{2cm}}$

ii. $4\ 000 + 700 + 9 = \underline{\hspace{2cm}}$

3.2 Students are questioned to reveal how many thousands, hundreds, tens and ones in various four-digit numbers that they themselves suggest

a. $6125 = \underline{\hspace{1cm}}$ thousands, $\underline{\hspace{1cm}}$ hundreds, $\underline{\hspace{1cm}}$ tens, $\underline{\hspace{1cm}}$ ones

b. $8009 = \underline{\hspace{1cm}}$ thousands, $\underline{\hspace{1cm}}$ hundreds, $\underline{\hspace{1cm}}$ tens, $\underline{\hspace{1cm}}$ ones

3.3 Students are given an example such as: $6549 = 6\ 000 + 500 + 40 + 9$. They are engaged in writing the missing figures

a. $5230 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$

b. $3426 = (3 \times \underline{\hspace{1cm}}) + (4 \times \underline{\hspace{1cm}}) + (2 \times \underline{\hspace{1cm}}) + (6 \times \underline{\hspace{1cm}})$

3.4 Students are questioned to make connection between place value and expanded form.

Create and solve problems involving place value

- 4.1 Students are involved in making a classroom bank, using work cards. They are allowed to go to the bank to withdraw or deposit money. Example:
- a) John withdraws 893 dollars. How many hundreds, tens and ones should be given?
 - b) Susan also wants 893 dollars; but she does not want any \$100 note. Find two different ways to give her \$890.00
- 4.2 Students are questioned to reveal the difference between the value of the 8 in 87 and the value of the 8 in 807.
- 4.3 Students are referred to the digits $\boxed{5}$ $\boxed{7}$ $\boxed{0}$ $\boxed{2}$ $\boxed{9}$ to build as many numbers as possible. They are led to write the smallest number that can be formed with these digits as well as the largest number that can be formed with these digits.

Play games and carry out simple investigations involving number concepts such as odd, even, factor, multiple, composite

- 5.1 Students are each given a copy of the "hundred squares." They are allowed to circle the multiples of 8, etc.

1	2	3	4	5	6	7	⑧	9	10
11	12	13	14	15	⑩	17	18	19	20
21	22	23	⑫	25	26	27	28	29	30

They do similarly with even numbers, odd numbers, etc.

- 5.2 Students are engaged in investigating multiples of 10. (A calculator can be used for investigating.)

Number	x10	x100
13		
26		
134		

Students are allowed to predict the products when they notice the pattern.

- 5.3 Students are allowed to write the 3 times table. They add up the digits of each of the numbers (e.g. 18 gives $1 + 8 = 9$). They are asked to reveal what happens. What if you add the digits for other tables? What if you multiply the digits?
- 5.4 Students are posed with the as to which two digit number has the most factors. They investigate.
- 5.5 Students are allowed to play the following game. They count and say 'buzz' when a prime number is reached. (1, buzz, buzz, 4, buzz, 6, etc.)
- Students are divided into groups of four.
 - A deck of cards is distributed to each group.
 - Each student is allowed to draw 5 cards.
 - Students are to arrange the cards in order to form the largest number.
 - One student from each group is allowed to show his or her card.
 - The student with the largest number earns a point for his/ her group.
 - The students who show their cards will then discard and redraw another 5 cards.
 - The process is repeated with another student from each group.
 - The first group that gets 3 points wins.

RESOURCES

Games, place value charts, number lines

ASSESSMENT

1. Name the place value position of the underlined digit: (a) 54 068 (b) 94 650 (c) 71 060 (d) 25 635 (e) 10 502 (f) 430 020
2. Write
 - a. in expanded form: (i) 99 330 (ii) 3 821 (iii) 673
 - b. in standard form: (i) 70 000 (ii) $(9 \times 1\,000) + (6 \times 100) + (2 \times 10) + (4 \times 1)$ (iii) $5 \times 10\,000 + 1 \times 1\,000 + 4 \times 100$
3. (a) Colour numbers that round to 700 red, 600 blue, 500 yellow
(b) Round to the nearest 10: (i) 19 (ii) 38 (iii) 307 (iv) 602 (v) 854
4. (a) Write three numbers with the digit 7, in the thousands place
(b) Mary has 27 635 dollars and Joan has 72 685 dollars. Which 2 has the greater value?
(c) Choose the number in which the underline 6 is smallest in value: (i) 3 629 (ii) 106 542 (iii) 468 531
5. Investigate which odd numbers between 1 and 25 has 3 factors

TERM 1 STRAND 4 Statistics and Data Handling UNIT 5: GOING SHOPPING

AT 4	LO 1: Collect data to solve simple problems using a variety of methods <i>Success Criteria</i>
-------------	--

1. Create simple real life problems that may be answered through observation, interview or questionnaire.
2. Plan data collection activities.
3. Develop simple interview schedules and questionnaires.
4. Collect data using observation, interviews or simple questionnaires to solve simple real life problems.

ACTIVITIES

Create simple real life problems that may be answered through observation, interview or questionnaire

1.1 Studen

1.2 St

Plan data collection activities

2.1 Stu

2.2 Stu

Develop simple interview schedules and questionnaires

3.1 Stude

3.2 Stu

Collect data using observation, interview or simple questionnaires to solve simple real life problems

4.1 Stude

4.2 St

RESOURCES

ASSESSMENT

TERM 2 SUMMARY	
UNITS	No. of SESSIONS

UNIT 1: ON THE BEACH AT 1: LO 3 Success Criteria: 1 - 4	24
UNIT 2: OUT OF THE BOX AT 2: LO 2 Success criteria: 1 - 4	10
UNIT 3: HELPING MUMMY AT 3: LO 3 Success criteria: 1 - 3	8
UNIT 4 : My Favourite Things AT 5: LO 1 Success criteria: 1 - 2	10
Unit 5: On the Beach AT 1: LO 3 Success criteria: 5 - 7	16
Unit 6: Helping Mummy AT 3: LO 4 Success criteria: 1 - 2	8

UNIT PLAN WITH SUGGESTED TEACHING, LEARNING & ASSESSMENT ACTIVITIES

TERM 2 STRAND 1 Number UNIT 1: ON THE BEACH

AT 1	LO 3: Create and solve real life problems involving addition and subtraction with numbers up to 100 000 and involving multiplication and division of numbers up to 3-digit numbers <i>Success Criteria</i>
-------------	--

1. Explain and use several strategies to recall the basic facts for addition and subtraction.
2. Create and solve real life problems involving addition and subtraction of whole numbers with totals up to 100 000.
3. Use a variety of strategies to recall multiplication basic facts for the 2 to 10 times tables.

4. Discuss and use a variety of strategies to solve simple problems involving multiplication of 2-digit by up to 2-digit numbers and division of up to 3-digit numbers by 1-digit numbers in real life settings.
5. Explain and use mental computation, calculator or pencil and paper strategies to carry out calculations when necessary.
6. Estimate the answer to a simple computation.
7. Determine the reasonableness of an estimated or exact answer to a computation and justify their conclusion.

ACTIVITIES

Explain and use several strategies to recall the basic facts for addition and subtraction

- 1.1 Students are introduced to near doubles, split strategy, compensation strategy, jump strategy through suitable examples and in each case asked to use the strategy to reveal results.
- 1.2 Students use near doubles to work out what happens when, say, 15 is added to 16. They are questioned to realise that $15 + 16$ is $15 + 15 + 1$. They realise likewise that $27 + 25 = 27 + 27 - 2$. They proceed to use the strategy to handle cases such as (a) $9 + 8$, (b) $11 + 12$, (c) $15 + 16$, (d) $25 + 24$, (e) $17 + 18$, (f) $35 + 34$
- 1.3 Students use split strategy work out what happens when, say, 67 is added to 32. They are questioned to realise that $67 + 32 = 60 + 30 + 7 + 2$. They similarly observe that $54 + 87 = 50 + 80 + 4 + 7$. They proceed to employ the split strategy to deal with cases such as (a) $43 + 34$, (b) $65 + 24$, (c) $81 + 17$, (d) $38 + 27$, (e) $55 + 38$, (f) $68 + 49$
- 1.4 Students use compensation strategy to work out what happens when, say, 38 is added to 42. They are led through a procedure as illustrated below.

$$\begin{aligned} 38 + 42 &= 38 + 40 + 2 \\ &= 78 + 2 \\ &= 80 \end{aligned}$$

$$\begin{aligned} 53 + 39 &= 53 + 40 - 1 \\ &= 93 - 1 \\ &= 92 \end{aligned}$$

$$\begin{aligned} 65 - 28: 65 - 30 &= 35 \\ 35 + 2 &= 37 \end{aligned}$$

$$\begin{aligned} 60 - 41: 60 - 40 &= 20 \\ 20 - 1 &= 19 \end{aligned}$$

Students proceed to use the compensation strategy to deal with cases such as

I. (a) $27 + 41$, (b) $45 + 29$, (c) $83 + 38$, (d) $57 + 42$, (e) $56 + 39$, (f) $68 + 49$

II. (a) $43 - 19$, (b) $85 - 31$, (c) $54 - 22$, (d) $79 - 18$, (e) $72 - 28$, (f) $37 - 19$

1.5 Students use jump strategy to reveal what happens when, say, 53 is added to 38.

Jump strategy

$$\begin{aligned} 53 + 38 \\ 53 + 30 &= 83 \\ 83 + 8 &= 91 \end{aligned}$$

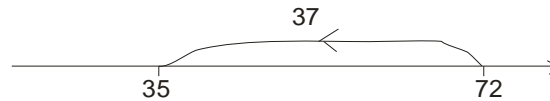
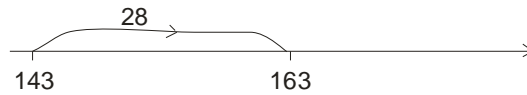
$$\begin{aligned} 54 - 37 \\ 54 - 30 &= 24 \\ 24 - 7 &= 17 \end{aligned}$$

Students proceed to use the jump strategy to deal with cases such as the following

III. a. $46 + 38$, b. $72 + 27$, c. $39 + 55$, d. $23 + 69$, e. $68 + 64$, f. $19 + 77$, g. $57 + 83$, h. $84 + 97$

IV. a. $29 - 18$, b. $36 - 17$, c. $54 - 25$, d. $71 - 46$, e. $66 - 39$, f. $87 - 55$, g. $90 - 34$, h. $45 - 23$

1.6 Students use number line to add and subtract numbers, for example, to illustrate the addition of 28 to 143 and the subtraction of 37 from 72.



Create and solve real life problems involving addition and subtraction of whole numbers with totals up to 100 000

2.1 Students are related a story where they are challenged to reveal that the numbers 4636 and 758 have a sum that we can find, that to find their sum we can put them in columns, lining the place values. A volunteer is invited to illustrate the steps for the rest of the class. The ensuing sequence involves the following five steps, which are explained to students, before affording them opportunity to do some for practice.

$$\begin{array}{r} \textcircled{1} \quad 4636 \\ + 758 \\ \hline \end{array} \quad \begin{array}{r} \textcircled{2} \quad \begin{array}{c} 1 \\ 4636 \\ + 758 \\ \hline 4 \end{array} \quad \begin{array}{r} \textcircled{3} \quad \begin{array}{c} 1 \\ 4636 \\ + 758 \\ \hline 94 \end{array} \quad \begin{array}{r} \textcircled{4} \quad \begin{array}{c} 1 \quad 1 \\ 4636 \\ + 758 \\ \hline 394 \end{array} \quad \begin{array}{r} \textcircled{5} \quad \begin{array}{c} 1 \quad 1 \\ 4636 \\ + 758 \\ \hline 5394 \end{array} \end{array}$$

2.2 Students are related a story where they are challenged to reveal that the numbers 634 and 418 have a difference that we can find, that to find their difference we can put them in columns, lining the place values. A volunteer is invited to illustrate the steps for the rest of the class. The ensuing sequence involves the following four steps, which are explained to students, before affording them opportunity to do some for practice.

$$\begin{array}{r} \textcircled{1} \quad 634 \\ - 418 \\ \hline \end{array} \quad \begin{array}{r} \textcircled{2} \quad \begin{array}{c} 2 \\ 6\bar{3}4 \\ - 418 \\ \hline 6 \end{array} \quad \begin{array}{r} \textcircled{3} \quad \begin{array}{c} 2 \\ 6\bar{3}4 \\ - 418 \\ \hline 16 \end{array} \quad \begin{array}{r} \textcircled{4} \quad \begin{array}{c} 2 \\ 6\bar{3}4 \\ - 418 \\ \hline 216 \end{array} \end{array}$$

In the discussion, special attention is paid to when it is necessary to borrow from the column to the left and to regroup in each column.

2.3 Students are related a story where they are challenged to realise what to do when they need to regroup and the digit to the left is a 0. They are led to see that in this case they need to regroup a higher place value. This is exemplified by referring to two numbers such as 32008 and 1869 and asking how to find their difference. As with other examples, we can put these numbers in columns, lining the place values. A volunteer is invited to illustrate the steps for the rest of the class. The ensuing sequence involves the following three steps, which are explained to students, before affording them opportunity to do some for practice

$$\textcircled{1} \begin{array}{r} 1 1 \\ 32008 \\ - 1869 \\ \hline \end{array}$$

Step 1: 8 is not enough to subtract 9. Try to regroup the tens. There are no tens. Try to regroup the hundreds. There are no hundreds. Regroup the thousands to 1 thousand and 10 hundreds.

$$\textcircled{2} \begin{array}{r} 1 9 1 \\ 32008 \\ - 1869 \\ \hline \end{array}$$

Step 2: Regroup 10 hundreds to 9 hundreds and 10 tens.

$$\textcircled{3} \begin{array}{r} 9 9 \\ 1 1 1 1 \\ 32008 \\ - 1869 \\ \hline 30139 \end{array}$$

Step 3: regroup 10 tens to 9 tens 10 ones. Now you can subtract.
 $18 - 9 = 9$ (ones)
 $9 - 6 = 3$ (tens); $9 - 8 = 1$ (hundred)
 $1 - 1 = 0$ (thousands)
 $3 - 0 = 3$ (ten-thousands)

Use a variety of strategies to recall multiplication basic facts for the 2 to 10 times tables

3.1 Students are led to where a table like the one illustrated below appears in the sight of every member of the class.

X	2	3	4	5	6	7	8	9	10
2									
3									
4									
5									
6									
7									
8									
9									
10									

Students are questioned to

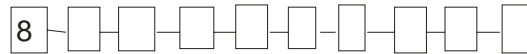
- write the multiples of 2, 3, 4, 5, 6, 7, 8, 9, 10 that are in the table
- look along the top of the column for the number 8; write the first five multiples of 8
- look along the left side of the row for the number 9; write the first five multiples of 9

Students proceed to use the chart to complete sentences such as: (a) $6 \times _ = 54$ (b) $_ \times 3 = 36$ (c) $_ \times 5 = 45$ (d) $_ \times 8 = 56$ (e) $7 \times 7 = _$

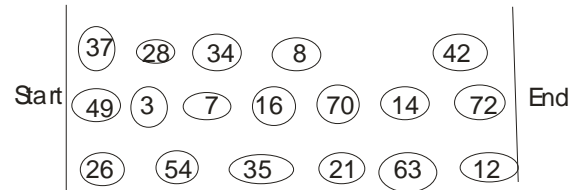
- Students practice saying (reciting) the tables. They say aloud the 3 times table and are questioned to see that the 'answers' are the same as counting by threes, or are multiples of 3. Students say these multiplication tables aloud: 2 \times , 3 \times , 4 \times , 5 \times , 6 \times , 7 \times , 8, 9 \times , 10 \times
- Students copy and complete a multiplication table. They circle all square numbers.

X	2	3	4	5	6	7	8	9	10
2									
3									
4									
5									
6									
7									
8									
9									
10									

3.4 Students count in eights.



3.5 Students are related a story where persons cross a river by stepping only on multiples of 7 and colour the numbers as they go.



Discuss and use a variety of strategies to solve simple problems involving multiplication of 2-digit by up to 2-digit numbers and division of up to 3-digit numbers by 1-digit numbers in real life settings

- 4.1 Students are introduced to a 'trick.' The multiplication is easily done if it is of 10, 100, 1 000, etc. Without much ado, we know, for example, that 16×10 is 160, that 16×100 is 1 600, that $16 \times 1\,000$ is 16 000, and so on.
- 4.2 Students are introduced to a 'trick.' The multiplication is easy to do if it is of 2. We think of $\times 2$ as 'double.' Thus 8×2 is double 8; 150×2 is double 150, and so on.
- 4.3 Students are introduced to a 'trick.' Think of $\times 4$ as double, double. Thus the expression 15×4 involves doubling 15 to get 30, then doubling 30 to get 60.
- 4.4 Students are introduced to a 'trick.' Think of $\times 8$ as double, double, double. Thus the expression 15×8 involves doubling 15 to get 30, then doubling 30 to get 60 and finally doubling 60 to arrive at 120.
- 4.5 Students are introduced to a 'trick.' Think of $\times 5$ as $\times 10$ then halve. Thus in calculating 25×5 , we could first work out 25×10 , which is 250, then taking half, to get 125.
- 4.6 Students are questioned to see that 'breaking down' multiplication can help you find the answer. Example:

$$\begin{aligned}
 &9 \times 16 \\
 &= 9 \times (10 + 6) \quad \longrightarrow \text{16 is regrouped to make} \\
 &\qquad\qquad\qquad 10 \text{ and } 6 \\
 &= 9 \times 10 + 9 \times 6 \quad \longrightarrow \text{Both numbers are} \\
 &= 90 + 54 \quad \text{multiplied by 9} \\
 &= 144
 \end{aligned}$$

- 4.7 Students are questioned to illustrate how to find the product where no regrouping is involved. They are led through an example as follows.

$ \begin{array}{r} 42 \\ \times 3 \\ \hline 6 \end{array} $	<p>Step 1: Multiply the ones $3 \times 2 = 6$</p>	$ \begin{array}{r} 42 \\ \times 3 \\ \hline 126 \end{array} $	<p>Step 2: Multiply the tens $3 \times 4 = 12$</p>
--	--	--	---

- 4.8 Students are questioned to illustrate how to find the product where regrouping is involved. They are led through an example as follows

$$\begin{array}{r} 1 \\ 38 \\ \times 2 \\ \hline 6 \end{array}$$

Step 1: Multiply the ones
 $2 \times 8 = 16$
 regroup as 1 ten and 6 ones. Put 6 in the ones column and 1 in the tens column

$$\begin{array}{r} 38 \\ \times 2 \\ \hline 76 \end{array}$$

Step 2: Multiply the tens. $2 \times 3 = 6$
 add in the 1 you carried.
 $6 + 1 = 7$
 put 7 in the tens place

The ensuring sequence involves the above steps, which are explained to students, before affording them opportunity to do some for practice.

- 4.9 Students are questioned to illustrate how to find the product when the multiplication is by a 2-digit number. The ensuring sequence involves the following steps, which are explained to students, before affording them opportunity for practice.

$$\begin{array}{r} 438 \\ \times 23 \\ \hline 1314 \end{array}$$

Step 1: multiply by the ones

$$\begin{array}{r} 438 \\ \times 23 \\ \hline 1314 \\ 8760 \\ \hline 10074 \end{array}$$

Step 2: multiply by the tens
 $2 \text{ tens} \times 8 = 16 \text{ tens}$, etc
 put a 0 to hold the ones place

Step 3: add

RESOURCES

Large number line, chart, multiplication chart, place value chart, abacus, work cards, hundred squares, game cards

ASSESSMENT

- (a) $43 - 6$ (b) $1\,000 - 464$ (c) $89 + 346 + 94$ (d) $1278 + 8756$
- Jenny has collected 569 stickers. How many more does she need to get 1 000?
- Find the sum of two thousand, five hundred and one and seventeen.
- Subtract 60 324 from 98 756. What must be added to the answer to make 40 000?
- Draw an array for each
 - 2×6

.....
.....
 - 4×7
 - 8×8
- Work out (a) 58×34 (b) $63 \div 7$

TERM 2 STRAND 2 Geometry UNIT 2: OUT OF THE BOX

AT 2	LO 2: Investigate properties of triangles in terms of angles and sides <i>Success Criteria</i>
-------------	--

1. Sort and classify triangles by length of sides and size of angles.
2. Investigate tessellation patterns of triangles.
3. Explain the concepts of horizontal, vertical, parallel and perpendicular lines.
4. Identify and draw parallel and perpendicular lines, vertical and horizontal lines.

ACTIVITIES

Sort and classify triangles by length of sides and size of angles

- 1.1 Stude
- 1.2 Stu

Investigate tessellation patterns of triangles

- 2.1 Stu
- 2.2 Stud

Explain the concepts of horizontal, vertical, parallel and perpendicular lines

- 3.1 Stud
- 3.2 Stud

Identify and draw parallel and perpendicular lines, vertical and horizontal lines

4.1 Stude

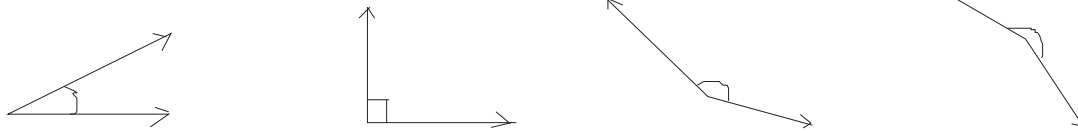
4.2 St

RESOURCES

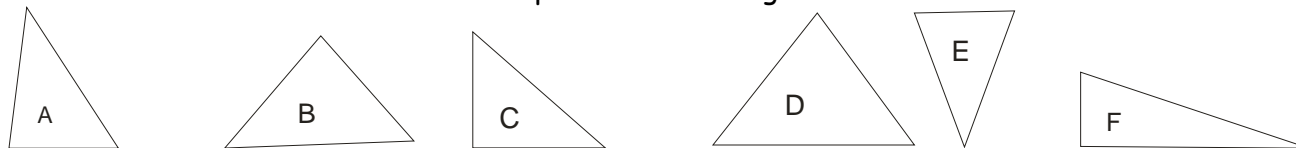
Cut out of triangle, protractors, clock faces, different shapes for tessellation patterns, ruler, flash cards

ASSESSMENT

1. Match these triangles to their names.



2. Measure the side and compare the angles of each triangle. Copy the table and use the information to complete it by writing A - F in the correct columns.



Equilateral	isosceles	scalene	right-angled

TERM 2 STRAND 3 Measurement UNIT 3: HELPING MUMMY

AT 3	LO 3: Create and solve real life problems involving basic standard units of capacity
------	--

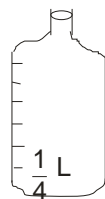
<i>Success Criteria</i>

1. Sort and order containers with various fractions of the litre ($\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$)
2. Solve problems involving the litre as a unit of capacity.
3. Solve simple real life problems involving capacity.

ACTIVITIES

Sort and order containers with various fractions of the litre ($\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$)

- 1.1 With their teacher students graduate a cooking oil Carib Spring bottle in quarter litres, using a cup holding a quarter litre.



Start with
one litre
in bottle
pour out
 $\frac{1}{4}$ litre



Pour three $\frac{1}{4}$
litres into the
bottle, using $\frac{1}{4}$
litre measure

- 1.2 Students are allowed to have as much experience as possible measuring volumes of different containers, such as jug bowls, jars, etc. To find the volume of the mug, for example, students fill the mug with water, pour the water into the measuring bottle and then observe the volume reading. The measured value of volume may not be exactly $\frac{1}{4}$ litre, $\frac{1}{2}$ litre, $\frac{3}{4}$ litre or 1 litre. Students are taught to approximate to the nearest level.
- 1.3 Students are allowed to bring in containers of various sizes, e.g., large soft drink bottle, chubby, large busta bottle, oil bottle, etc. They are allowed to sort and order containers according to their volume: e.g. less \rightarrow chubby; more \rightarrow oil bottle; most \rightarrow large soft drink.
- 1.4 Now students are allowed to sort containers based on litre containers holding $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ litre.

Solve problems involving the litre as a unit of capacity

- 2.1 [cp. teaching problem solving, page 14, No.2. Encourage small group work.]

- 2.2 Students are told a story in which you need to put exactly $3\frac{3}{4}$ litres of water into a bucket. The only measures you have are $\frac{3}{4}$ l, $\frac{1}{2}$ l and $\frac{1}{4}$ l. They are asked to reveal how you will measure the liquid to put in the bucket.
- 2.3 Students are told a story in which Allan needs 5 litres of oil. He has $3\frac{2}{4}$ litres. They are asked to reveal the number of bottles he should buy if oil is sold in $\frac{1}{2}$ litres.
- 2.4 Students are told a story in which Jane has 5 tins of paint. Each holds 7 litres. They are asked to disclose how much paint Jane has.

Solve simple real life problems involving capacity

- 3.1 Students are related stories and asked to solve the problem involved in every case. For example, they are told a story in which a family drank $1\frac{1}{2}$ litres of milk in the morning, 1 litre at midday and $1\frac{1}{2}$ litres in the evening. They are asked to reveal the number of litres they drank in a week.
- 3.2 Students are told a story in which a tank holds 150 litres. They are asked to reveal the number of times a small bucket holding 6 litres can be filled from it.
- 3.3 Students are told a story in which from 1 000 litres were sold 280 litres, 56 litres, 90 litres, 85 litres. They are asked to reveal how much less than 500 litres was the amount left.
- 3.4 Students are in finding the number of litres required for 8 persons for 6 weeks if each is allowed a $\frac{1}{2}$ litre bottle twice a week.
- 3.5 Students are engaged in revealing the difference between 17 litres and $15\frac{1}{2}$ litres.
- 3.6 Students are engaged in disclosing the sum of 4 litres, 60 half-litres and $164\frac{1}{2}$ litres.

RESOURCES

Containers of various sizes, 1 litre containers, $\frac{1}{2}$ litre containers, $\frac{1}{4}$ litre containers

ASSESSMENT

2. Frank has a 250 ml cup. He needs to fill a 2 litre bottle with water. How many times must he fill his cup in order to fill the bottle?
3. A beaker holds 1 litre of fresh water. Kate must pour 750 ml of it into the aquarium. How much water is left in the beaker?
4. Water is escaping at the rate of $\frac{1}{2}$ litre every 5 minutes. How much escapes in $\frac{1}{2}$ hour?

5. During May a farmer sent 420 litres of milk, twice a day to 8 dairies. If the milk was shared equally among them, how much did each get per day?

TERM 2 STRAND 5 Patterns, Functions & Algebra UNIT 4: MY FAVOURITE THINGS

AT 5	LO 1: Show number relationships using given information <i>Success Criteria</i>
-------------	---

1. Draw arrow diagrams and bar graphs to show multiplication tables.
2. Extend and explain patterns using arrow diagrams and bar graphs.
3. Create and solve problems by looking for patterns.

ACTIVITIES

Draw arrow diagrams and bar graphs to show multiplication tables

- 1.1 The class is shown a picture of students engaged in some exercise, each having a number from 1 to 12 pinned to their foreheads. Example: $\boxed{1}$ $\boxed{2}$ $\boxed{3}$, ...

Students are asked to imagine that for the work done, each class member is to receive a reward. Students are allowed to see that the rewards are "dished out" so that:

	$\boxed{1}$		$\boxed{8}$
person	$\boxed{2}$	gets	$\boxed{16}$
	$\boxed{3}$		$\boxed{28}$

Students are asked to suggest the reward that person $\boxed{4}$ gets and to give a reason. Students are asked to disclose a rule for a person (from 1 to 12) to get a reward. (Answer: To get a reward, a person is asked to show his number, and that number is multiplied by 8. In other words, person n will get reward $8n$, where n may be any number in the set (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12). Check: if n is 10, person 10 will get reward 8×10 or 80. In the ensuing exercise students engage in recitation of the 8 times multiplication table.

1.2 Students are posed with question: What do we observe in this case? "1 matches with 2; 2 matches with 4; 3 matches with 6; 4 matches with 8; 5 matches with 10; 6 matches with 12..., (allowing us to generalise by saying) x matches with $2x$ " This relationship is (can be) illustrated using an arrow diagram.

[Space for arrow diagram consisting of two loops, the one to the left showing numbers 1, 2, 3, 4, 5 and the one to the right, numbers 2, 4, 6, 8, 10] [

Note: Saying x matches with $2x$ is just another way to say any number in the first set matches with twice itself. In other words, it is a way to generalise.] It is not always the case. Another possibility: "1 matches with 3; 2 matches with 6; 3 matches with 9; 4 matches 12; 5 matches with 15; 6 matches with 18."

1.3 St

Extend and explain patterns using arrow diagrams and bar graphs

2.1 Stu

2.2 Stud

Create and solve problems by looking for patterns

3.1 Stud

3.2 Stud

RESOURCES

ASSESSMENT

TERM 2 STRAND 1 Number UNIT 5: ON THE BEACH

AT 1	LO 3: Create and solve real life problems involving addition and subtraction with numbers up to 100 000 and involving multiplication and division of numbers up to 3-digit numbers <i>Success Criteria</i>
------	--

- 5. Explain and use mental computation, calculator or pencil and paper strategies to carry out calculations when necessary.
- 6. Estimate the answer to a simple computation.
- 7. Determine the reasonableness of an estimated or exact answer to a computation and justify their conclusion.

ACTIVITIES

Explain and use mental computation, calculator or pencil and paper strategies to carry out calculations when necessary

- 5.1 Stu
- 5.2 Stude

Estimate the answer to a simple computation

6.1 Students are introduced to two ways estimation helps us: (i) to do mathematics mentally and (ii) to have a good idea what the answer should be. They are questioned to realise that the skill involves (a) grouping pairs of number to make 10 or 100 or 1 000 and (b) rounding numbers. They are such and such that in seeking the answer to $158 + 111 + 85 + 114$, one first estimate, noting that there are three 100s. The 85 and the 14 almost make another hundred. That leaves the 58 and 11, which is about $60 + 10$. Thus the answer should be about

$$\begin{array}{r} 300 \\ 100 \\ 70 \\ \hline 470 \end{array}$$

- 6.2 Students are exposed to an example of grouping number. In dealing with $3449 + 2021 + 550 + 28$, you may
- start with place value $3\ 000 + 2\ 000 = 5\ 000$
 - group the hundreds $4\ 000 + 5\ 000 = 9\ 000$
 - group to make 100s 49 and 50 almost make 100
 - What is left? 21 and 28 round to $20 + 30$, almost 50
 - The answer is about 6 050
- 7.1 For practice students proceed to mentally group sets of numbers, such as the following. They write down their estimates. (i) $197 + 102$, (ii) $892 + 104 + 1003$, (iii) $2056 + 358$, (iv) $81 + 19 + 156 + 42$, (v) $8\ 090 + 1\ 900 + 12 + 96$ When every one has an estimate, students compare to see if each estimate is close and discuss how good their estimates are.
- 7.2 Student

RESOURCES

Large number line, chart, multiplication chart, place value chart, abacus, work cards, hundred squares, game cards

Assessment

1. 1145 and 2843 add up to about (a) 3 000 (b) 4 000 (c) 5 000
2. If I take 970 from 6 100, the answer is about (a) 7 000 (b) 6 000 (c) 5 000
3. Do these mentally: (a) $0 + 7 = \square$ (b) $7 + 8 = \square$ (c) $13 - 5 = \square$ (d) $24 \div = \square$ (e) $7 \times 8 = \square$

TERM 2 STRAND 3 Measurement UNIT 6: HELPING MUMMY

AT 3	LO 4: Create and solve real life problems involving use of basic standard units of mass <i>Success Criteria</i>
-------------	---

1. Justify the need for grams and kilograms as units of measure.
2. Estimate, measure and record mass using grams and kilograms.
3. Create and solve simple real life problems involving mass in grams and kilograms.

ACTIVITIES

Justify the need for grams and kilograms as units of measure

- 1.1 Students will need sand, different size stones, standard weights (100g, 1Kg), balance, bowls. Students observe as two bags of sand are brought to the class. Two volunteers, one with small hands and one with large hands. The class is informed that each student is going to sell sand by the handful. The students are given bowls and are asked to work in pairs. Each pair is going to buy the same amount of sand but from different shops. They are to compare the amount each receives. Each pair is asked: Which shop gives more sand for a handful?
- 1.2 The two shopkeepers then use stones as their weight measure. Shopkeeper A has a small stone, shopkeeper B, a large stone. Students are to repeat the exercise as above and they are asked to compare the amounts given.
- 1.3 The two shopkeepers are given 100g and 1 Kg weights. Students are to work in pairs asking for 100g of sand and 1 Kg of sand. They compare the amount that each shopkeeper gives. Are they the same? Are they different?
- 1.4 Class discussion on the observations students made. Is there a need for grams and kilograms as units of measure?

Estimate, measure and record mass using grams and kilograms

- 2.1 Students are told to bring in different objects to weigh e.g. pencil, piece of cheese, piece of salami, piece of cake, breadfruit, coconut, books, a hand of plantain, sugar, flour.
- 2.2 Students are asked to estimate the mass of the objects they brought in.
- 2.3 Students are then asked to measure and record the mass of each object using grams and kilograms where necessary.

Create and solve simple life problems involving mass in grams and kilograms

- 3.1 Students are asked to suppose that a sack of sugar weighs 29 Kg and a tin of pain weighs 7 Kg. They are asked to work out how much these things weigh together.
- 3.2 Students are asked to suppose that a breadfruit weighs 2765 g and a melon, 3830g. They are asked to reveal how much more the melon weighs.
- 3.3 Students are told a story in which a truck carries 880 bricks and that each brick weighs 3 Kg. They are asked to use the information to calculate the total mass of the bricks.
- 3.4 Students are told a story in which six tins of chocolate weigh 1440 g. They are engaged in calculating the mass of each tin.
- 3.5 Students are told a story in which Leah bought 2 turkeys, one weighing 1843 g and the other, 1378 g. They are asked to calculate the total mass of the two turkeys.
- 3.6 Students are told a story in which Mr. James weighs 78 Kg and his son weighs 49 Kg. They are asked to reveal by how much Mr. James is heavier than his son.
- 3.7 Students are told a story in which Jane has 9 packets of biscuits. Each packet weighs 337 g. They are asked to say the total mass of the packets.
- 3.8 Students are told a story in which the total mass of four packets of peanuts is 1816 g. They are asked to disclose the mass of each packet of peanuts.
- 3.9 Students are posed with a problem, which is then discussed to ensure understanding.
 - a. The class is divided into groups of four. As the teacher goes around, each group comes to its own solution to the problem. Students are asked helpful questions to facilitate progress.
 - b. One member from some of the groups presents their solution on the board. This is followed by teacher-directed discussion on the merits of the different solutions.
 - c. Groups are challenged to find a faster method of solving the problem or are set a new but related problem.

RESOURCES

Sand, measuring cups, balance, standard weights, bowls, stone

ASSESSMENT

1. Write whether milligram, gram, kilogram or tonnes would be best for measuring the mass of each of these objects
 - a. an electric iron
 - b. a grain of sand
 - c. a pen
 - d. a cheetah
 - e. a speck of dust
 - f. a ship
 - g. a bag of tomatoes
 - h. a fire truck

2. A motor car weighs 900 Kg, the driver $80\frac{1}{2}$ Kg and a passenger 69 Kg. Find the total weight.
3. Find the weight of a sack of flour, if 24 sacks weigh 3 000 Kg.

TERM 3 SUMMARY	
UNITS	No. of SESSIONS
UNIT 1: ON THE BEACH AT 1: LO 4 Success Criteria: 1 - 4	14
UNIT 2: HELPING MUMMY AT 3: LO 5 Success criteria: 1 - 2	8
UNIT 3: Going Shopping AT 4: LO 2 Success criteria: 1 - 3	10
Unit 4: My Favourite Things AT 5: LO 2 Success criteria: 1 - 2	10
Unit 5: On the Beach AT 1: LO 4 Success criteria: 5 - 7	16
Unit 6: Helping Mummy AT 3: LO 6 Success criteria: 1 - 6	16

UNIT PLAN WITH SUGGESTED TEACHING, LEARNING & ASSESSMENT ACTIVITIES

TERM 3 STRAND 1 Number UNIT 1: ON THE BEACH

AT 1	LO 4: Use and write basic fractions in a variety of ways in real life situations <i>Success Criteria</i>
-------------	--

1. Use diagrams/pictures to represent commonly used unit, proper and improper fractions and mixed numbers.
2. Use a variety of strategies to generate fractions that are equivalent to simple fractions (halves, thirds, quarters, eighths, tenths).
3. Explain how fractions and whole numbers are related.
4. Solve simple problems involving common fractions in real life settings.

ACTIVITIES

Use diagrams/ pictures to represent commonly used unit, proper and improper fractions and mixed numbers

1.1 Studen

1.2 Stud

Use a variety of strategies to generate fractions that are equivalent to simple fractions (halves, thirds, quarters, eighths, tenths)

2.1 Stu

2.2 Stud

Explain how fractions and whole numbers are related

3.1 Stu

3.2 Stud

Solve simple problems involving common fractions in real life settings

4.1 Stud

4.2 Stud

RESOURCES

Diagrams, pictures, fraction walls, fraction pies, fruits, cut-outs, knife, scissors

ASSESSMENT

1. Use diagrams to represent these fractions

A. $\frac{5}{9}$ b. $1\frac{3}{4}$ c. $\frac{6}{4}$ d. $\frac{3}{8}$ e. $\frac{1}{6}$ F. $\frac{4}{10}$ g. $2\frac{8}{9}$

2. i) Complete the following

A. $\frac{1}{8} = \frac{\quad}{16}$, $\frac{2}{8} = \frac{\quad}{16}$, $\frac{3}{8} = \frac{\quad}{16}$ $\frac{\quad}{8} = \frac{8}{16}$, $\frac{\quad}{8} = \frac{16}{16}$

B. $\frac{1}{3} = \frac{\quad}{6}$, $\frac{2}{3} = \frac{\quad}{6}$, $\frac{3}{3} = \frac{\quad}{6}$

C. $\frac{1}{4} = \frac{\quad}{8}$, $\frac{2}{4} = \frac{\quad}{8}$, $\frac{3}{4} = \frac{\quad}{8}$

D. $\frac{1}{2} = \frac{\quad}{4} = \frac{\quad}{6} = \frac{\quad}{10}$

ii) fill in the blanks

A. $\frac{1}{4} = \frac{12}{\square}$ b. $\frac{2}{3} = \frac{\square}{15}$ c. $\frac{7}{10} = \frac{49}{\square}$ D. $\frac{5}{8} = \frac{\square}{32}$

3. Solve the following problem

a. John had 6 cherries and gave 2 to Bill. What fraction was left?

- b. There were four cakes. One was cut into ten pieces. Seven of the slices were eaten. How much cake was left?
Draw the answer.
- c. Jane gives her pet cat $\frac{1}{8}$ cup of milk and $\frac{1}{3}$ cup of grated cheese each day. How much food is given each day to the cat?

TERM 3 STRAND 3 Measurement UNIT 2: HELPING MUMMY

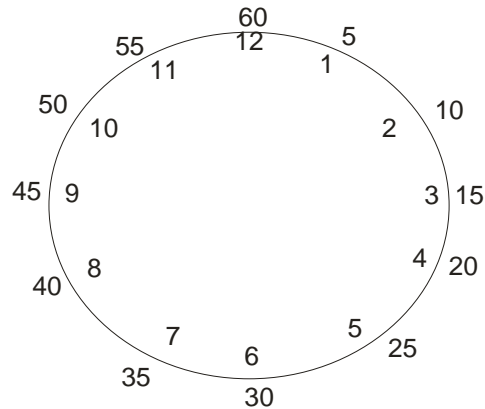
AT 3	LO 5: Create and solve time related problems <i>Success Criteria</i>
-------------	--

1. Tell, represent and write time using analogue and digital clocks.
2. Create and solve simple problems involving duration, starting time, finishing time and relationships between units of time.

ACTIVITIES

Tell, represent and write time using analogue and digital clocks

- 1.1 Students observe as teacher distributes material. They are engaged in making clock faces. A demonstration clock is made.



Students are allowed to write the 5 minute intervals 5, 10, 15,..., 60 on their clock faces next to the hour numeral.

1.2 Students are allowed to show time using both hour and minute hand. They are led to look at the hour hand first to learn about what time it is. They then focus on the minute hand.

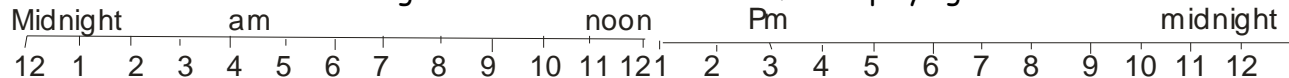
1.3 Students make their digital clock by writing numbers on cards and arranging cards in order based on the time given.
Example:

2:10 :

1.4 Students work in pairs. One person says a time. The other student has to move the hands on a clock face to show the time or use number cards to represent the time using digital clocks.

Create and solve simple problems involving duration, starting time, finishing time and relationships between units of time

2.1 Students with the teacher build a long time line marked in hours for displaying on the wall or chalkboard.

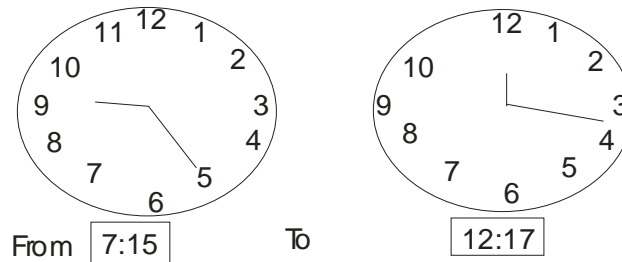


Students use the time line to answer questions like:

- a) David plays football on Saturday mornings from 10 O'clock till noon. For how many hours does he play football?
- b) Tia comes to school at 9 O'clock. She goes home at 4 O'clock. For how many hours is he at school?

2.2 Students are presented with clocks. Example:

How long?



2.3 Students are grouped. In their groups they are given statements which they use to create problems. Examples:

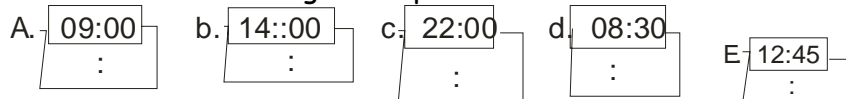
- i. Began 12:15 Ended 2:33pm
- ii. Ended 4:35pm -- Time elapsed 45 minutes
- iii. Started 3pm - Lasted 4 hours
- iv. Travelled for 43 minutes -- Arrived at 3:15

RESOURCES

Work sheets, clocks

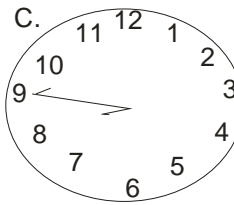
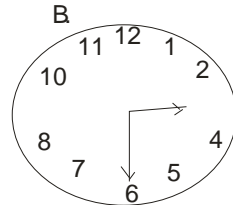
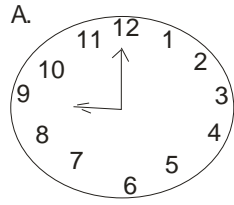
ASSESSMENT

1. (i) Write these times using am or pm.

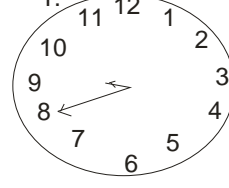
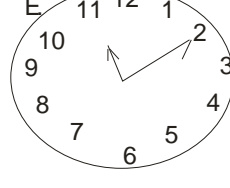
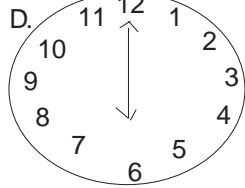


(ii) Write these times using 24-hour time

These are am times



These are pm times



2. Solve the following

- A flight from Trinidad to Jamaica takes 4 h 30 min. If Tom takes a flight from Trinidad on Monday at 11:35 p.m., what day and time will he arrive in Jamaica?
- A bus left Portsmouth at 9:00am and arrived at Roseau at 01:15pm. How long did the bus take to complete the trip.

TERM 3 STRAND 4 Statistics and Data Handling UNIT 3: Going Shopping

AT 4	LO 2: Use, construct and interpret simple graphs using simple scales <i>Success Criteria</i>
-------------	--

- Read data presented in pictographs and bar graphs that use a simple scale in real life problems.
- Select an appropriate method and scale to represent a set of collected data in real life problems.
- Represent and interpret data presented in pictographs and bar graphs that use a simple scale in real life problems.
- Represent and interpret data collected using tally charts.

ACTIVITIES

Read data presented in pictographs and bar graphs that use a simple scale in real life problems.

- 1.1 Stude
- 1.2 Studen

Select an appropriate method and scale to represent a set of collected data in real life problems.

- 2.1 Stude
- 2.2 Stud

Represent and interpret data presented in pictographs and bar graphs that use a simple scale in real life problems.

- 3.1 Studen
- 3.2 Stud

Represent and interpret data collected using tally charts.

- 4.1 Stud
- 4.2 Stu

RESOURCES

ASSESSMENT

TERM 3 STRAND 5 Patterns, Functions and Algebra UNIT 4: My Favourite Things

AT 5	LO 2: Create and solve simple problems based on number patterns <i>Success Criteria</i>
------	--

1. Conduct simple number investigations.
2. Investigate and create patterns involving multiples.

ACTIVITIES

Conduct simple number investigations

1.1 Students are shown a picture of people in some field, each person having a number pinned to their foreheads.

Example: $\boxed{1}$ $\boxed{2}$ $\boxed{3}$, ...

Students are questioned on what the people are doing in the field and led to say the people are working.

Students are asked to imagine that for the work done, each person is to receive a reward. Students are allowed to see that the rewards are "dished out" so that:

	$\boxed{1}$		$\boxed{3}$
person	$\boxed{2}$	gets	$\boxed{5}$
	$\boxed{3}$		$\boxed{7}$

Students are asked to suggest the reward that person $\boxed{4}$ gets and to give a reason. Students are asked to disclose a general pattern by saying what reward person \boxed{N} will get. (Answer: Person n will get reward $2n + 1$. Check: if n is 10, person 10 will get reward $2 \times 10 + 1$ or 21)

1.2 Stud

Investigate and create patterns involving multiples

2.1 Stu

2.2 s

RESOURCES

Sentence strips

ASSESSMENT

1. Read each statement carefully. Write T for true and F for false.

- a. An even number added to an even number makes an odd number.
 - b. The expression 12×12 is the same as 2×72
 - c. Any number multiplied by zero is zero.
 - d. An odd number multiplied by an odd number is always even.
 - e. An even number multiplied by an odd number is always even.
2. Complete the following patterns
- a. 3, 6, 9, __, __, 18, __, 24
 - b. 15, __, 45, __, __, 90, __
 - c. 196, 210, 234, __, __, __

[Unit 5 to be inserted]

TERM 3 STRAND 3 Measurement UNIT 6: Helping Mummy

AT 3	LO 6: Create and solve real life problems involving calculation of bills and change <i>Success Criteria</i>
-------------	---

1. Represent amounts of money in a variety of ways.
2. Read and write amounts of money up to \$100 000
3. Discuss and prepare simple budgets (e.g. I have \$20 - How should I spend it?)
4. Make up grocery bills and find change in simple real life situations.
5. Solve problem involving money

ACTIVITIES

Represent amounts of money in a variety of ways

- 1.1 Students are shown a picture of persons in a field and asked what these persons are doing there. They are led to saying the people are doing work.
- 1.2 Students are asked to imagine that they have asked (or employed) the people to do work for them and that each person is to receive a cash reward. In a particular case, one person is to receive \$6.95, another person \$823.44 and a third person, \$1089.68. The task now is to bring out or show each amount.
- 1.3 Students are grouped and given work cards. Use as few coins and notes as possible to make up the following amounts: (a) \$6.95, (b) \$823.44, (c) 1089.68.
- 1.4 Students use combinations of \$100, \$50, \$20, \$10 and \$5 to work out the bill these people have in their wallets:
 - a. James has 8 bills that total \$295.
 - b. Janice has 10 bills that total \$550.

Read and write amounts of money up to \$ 100 000

- 2.1 Students are grouped. Each group is given two sets of work cards and allowed to match the figures in words.
Example:

\$540.00	\$54400.00	\$5040.00
five thousand and forty dollars		

Discuss and prepare simple budgets (e.g. I have \$20 - how should I spend it?)

- 3.1 In a whole class activity, students make up a class budget for a cake sale on Friday during snack. We have only \$20 to spend for the ingredients.
- 3.2 Students are placed in groups. Each group is given different amount of money to spend. Example: group 1 \$10, group 2 \$5, group 3 \$15 and group 4 \$20. Students allowed to make up a budget of how the money should be spent. They are encouraged to include an amount for savings in their budget.

Make up grocery bills and find change in simple real life situations

4.1 Create a classroom shop. Label price tag on each item. Example:

Item	Price
oil	\$5.25
hot dog	\$4.15
refresh soap	\$1.68
lollipop	\$0.50
peanut butter	\$12.84
sugar lb	\$1.29

4.2 Students are told a story in which Gina goes to the shop with \$10. She buys 1 bottle of oil, 1 lb of sugar and 5 lollipops. They are asked to reveal (a) the amount Gina spent and (b) what her change was.

4.3 Students are grouped. Each group is allowed to make a bill of at least 4 items. Group exchange their bills and solve them.

Solve problems involving money

5.1 Students are told a story in which Jack owes a friend \$436. The friend owes him \$385. They are asked to say the amount of money Jack must give his friend to be out of debt.

5.2 Students are told a story in which Joan has to find the cost of 8 articles at \$17.05 each. They are asked to help Joan solve the problem.

5.3 Students are told a story in which Sam is a mason and earns \$43.35 per day. His sister is a typist and gets \$27.25 per day. They are asked to disclose how much more money Jack earns than his sister in 4 days.

5.4 Students are told a story in which a workman spends 90 c per day on a return bus ticket and he travels to work 5 days each week. They are asked to work out the amount spent in fare in (a) 1 week, (b) 4 weeks, (c) 48 weeks

RESOURCES

Cards, coins, notes, classroom shop

ASSESSMENT

1. (i) Shown an amount in a picture, can write it. Example, can write the amount shown in each picture.
(ii) Use any combination of \$100, \$50 and \$20 bills to work out what bills these people have in their wallets.
 - a. Bonnie has 5 bills that total exactly \$240.
 - b. Simon has 6 bills that total more than \$150 but less than \$300.
2. (i) Given an amount in figures (numbers and symbols), can write it in word. Example, can write these amounts in words:
(ii) Given an amount in words, can write it in numbers and symbols. Example, can write these amounts in numbers and symbols:
 - a. twelve thousand, five hundred and seventy dollars and thirty-five cents.
 - b. Eight thousand, two hundred and fifty dollars and five cents.
3. Allan has \$100.00. Write how you would spend it if you were Allan.
4. Jane and her friends ordered 3 fried chicken, 3 soft drinks, 5 doughnuts and 2 sandwiches.
 - a. Calculate the amount that they paid.
 - b. What change did they receive from fifty dollars?

Joys Snack Bar Menu	
Fried chicken	\$2.50
Fries	\$3.00
Fruit juice	\$4.00
Soft drink	\$2.00
Sandwiches	\$3.50
Dough nut	\$1.50

EXEMPLAR LESSON PLAN	TERM 1
UNIT 1:	TOPIC: Number
TIME: 30 minutes	
EXPECTED BACKGROUND KNOWLEDGE OF STUDENTS: Students can write 2, 3, 4 digit numbers in expanded form	

LEARNING OUTCOME 2: Create and solve problems involving simple properties of numbers			
SUCCESS CRITERIA:3 Write 2, 3, 4 or 5 digit numbers in expanded forms			
ORGANISATION & TIME	TEACHER ACTIVITY	PUPIL ACTIVITY	RESOURCES
WAY IN 5 min	▪	▪ Students	
DEVELOPMENT 15 min	1.	▪	
CONCLUSION 5 min	▪	▪	
WAY ACROSS 5 min			
ASSESSMENT			
EVALUATION OF LESSON			

EXEMPLAR LESSON PLAN	TERM 2
UNIT 1: ON THE BEACH	TOPIC: Addition
TIME: 30 minutes	
EXPECTED BACKGROUND KNOWLEDGE OF STUDENTS Students can	

▪			
LEARNING OUTCOME 3:			
SUCCESS CRITERIA Students will			
ORGANISATION & TIME	TEACHER ACTIVITY	PUPIL ACTIVITY	RESOURCES
WAY IN 5 min			
DEVELOPMENT 17 min			
CONCLUSION 5 min			
WAY ACROSS 5 min			
ASSESSMENT 3 minutes			
EVALUATION OF LESSON			

UNIT:		TOPIC:	
TIME: 30 minutes			
EXPECTED BACKGROUND KNOWLEDGE OF PUPILS: ▪			
LEARNING OUTCOME 4:			
SUCCESS CRITERIA: Students will be able to identify half of a single object.			
ORGANISATION & TIME	TEACHER ACTIVITY	PUPIL ACTIVITY	RESOURCES
WAY IN 5 min		▪	
DEVELOPMENT 15 min	▪	▪	
CONCLUSION 5 min	▪	▪	
WAY ACROSS 5 min			
ASSESSMENT	▪	▪	
EVALUATION OF LESSON			

References

