

Mathematics

Teacher Guide

2015



Standard Based

Mathematics

Teacher Guide 2015

Elementary Two

Standard Based



Department of Education

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SECRETARY'S MESSAGE

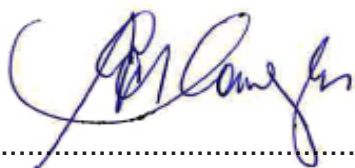
This Mathematics Elementary 2 Teacher Guide is part of the new Standard Based Curriculum for Elementary schools in Papua New Guinea. This means that the study of Mathematics in Standard Based Curriculum is written to raise the standards of numeracy level in Papua New Guinea in comparison to the Pacific and elsewhere globally. This enhances the 21st Century changing and technological needs for individual's full participation and performance in the society.

The standards stated in the Mathematics Syllabus describe what students should know, be able to do and achieve before they begin primary school. They are based on everyday Mathematics used in the community and teachers are encouraged to use resources in the community to help in their teaching.

The teachers should plan their daily lessons using the examples outline in this Teacher Guide. They should also use the assessment methods and strategies for students to achieve the content standards. Teachers are required to use their understanding about Mathematics concepts and make teaching and learning fun and enjoyable for students.

English will be the medium of instruction to teach Mathematics and other subjects in all Elementary schools.

I commend and approve this Elementary 2 Teacher Guide for Mathematics to be used in all Elementary schools throughout Papua New Guinea.



.....
DR. UKE W KOMBRA, PhD
Acting Secretary for Education

INTRODUCTION

Mathematics at the Elementary level of schooling is based on the everyday Mathematics used in the community. When students are introduced to formal learning the known knowledge and skills of Mathematics is the foundation by which teachers take on to help students to learn the unknown knowledge and skills in mathematics. The lessons taught therefore should be playful, fun and should be used by students for their everyday living.

The Standard Based Mathematics accommodates the community mathematics and provides opportunities for students to learn the new concepts in mathematics and helps students to compete with their peers not only in the community but also in the nation.

This Teacher Guide for Elementary Two provides the guided lessons that teachers will use to learn many concepts in mathematic linking both to what students already know and what they need to learn.

How to use the teacher guide

This teacher guide is organised into sections;

- Teaching and learning strategies and approaches,
- Planning and programming
- Daily Lesson plans (scripted)
- Assessment and reporting samples
- Glossary
- Resources and Materials

You as the implementer of this teacher guide should do the following;

- Read or skim through all the sections of the book
- Then plan all lessons into yearly, weekly and daily plans as suggested according to your context.
- The lessons are all numbered; therefore this should make it easy for you to insert into your teaching plans. Ensure all lessons are taught during the year
- Implement or teach the lessons according to your plans.

INTRODUCTION

ASSESSMENT AND REPORTING

In standard based curriculum assessment, the input, the process and output of the lesson and its impact on the child's learning is very important. Therefore it is important that you assess the students what they learn during introduction of the lesson, during class participations and what they learn at the end of each lesson. This can be done using checklists or observations sheets that you are familiar with or you can check what they produce and write in their books to verify your assessments of each student. Short, simple tests can be given, for example counting in 2s, 5s and 10s.

Each lesson has an assessment task at the end of the lesson and you should be able to use the assessment samples to record the progress of your student on weekly basis. These should be kept in their student portfolios. This will give you the honest assessment by the end of each term and year.

Check and link all assessment tasks to the content standards in the syllabus to ensure that the assessment tasks have met the mathematical knowledge, skills and attitudes embedded in the standards.

Modify or plan lessons that will cater for content standards that do not have the lessons

Report the progress of your students learning using the suggested samples according to your termly or yearly plans.

Time allocation

Time allocated for Mathematics is 240 minutes per week and each lesson can be taught for 60 minutes per week.

Songs and rhymes

The Mathematics lessons can start with Mathematical songs and rhymes, and starter activities to help students think in Mathematics and enjoy doing the activities. Some suggested songs are placed in the Resources part of this Teacher Guide.

Mathematical terms and resources

Teachers are required to use Mathematical terms and words as used in the lessons and prepare resources before teaching the lessons. Word lists and resources have been made for your reference.



KEY FEATURES

Curriculum principles

The Mathematics syllabus is based on three learning principles:

- children learn best when new learning is built on what they already know in their culture and home
- when children play, use real objects and solve real life problems
- when mathematics is fun, challenging and structured.

Benefits for students

When students are introduced to Mathematics in Elementary Two they

- learn about mathematics at an early age .
- learn to count numbers, compare and order numbers, combine and separate numbers, measure heights, weights, lengths, make patterns and shapes and collect data using their prior knowledge and skills from Elementary One
- will use what they learn in Mathematics in Elementary One
- learn to compete with others, and enjoy to participate in Mathematics as a very important skill in their everyday lives

Catering for diversity

Many students have special needs including those who are gifted or those who are disadvantaged physically, emotionally or intellectually. Provide opportunities in the mathematics curriculum for these students so that they can participate in a variety of experiences and develop appropriate Mathematics skills. Use acceptable terms to describe people with disabilities such as students with speech, sight or hearing impairment or students with a physical disability.

Inclusive Curriculum

Students are surrounded by many situations, experiences and messages that are contained in the curriculum. Students use these to help them understand their world and form opinions about themselves and others. It is important that these messages and experiences lead students to understand that they have the right to participate in any curriculum activity regardless of their gender, ability, language group, culture or where they come from.

An inclusive curriculum:

- supports students to use their vernacular language and encourages teachers to use local materials and relate teaching to real life situations
- helps students to value and appreciate different roles, responsibilities and obligations that males and females play in their society
- values and places equal emphasis on female and male experiences in the curriculum

KEY FEATURES

- recognises that students come from many different cultural and language backgrounds and caters for these differences for students from different living environment
- recognises that everyone belongs to a cultural group and all cultural groups should be treated with respect
- provides a range of learning experiences cultural activities
- allows students to appreciate, respect and participate in cultural activities from other culture
- promotes a safe , healthy, happy and non –threatening learning environment
- provides opportunities for students to apply problem – solving and thinking skills in a range of learning situations

Mathematics syllabus

The Standards Based syllabuses for Language, English, Culture and Community and Mathematics have the same format for Elementary.

The content of Mathematics:

- is presented in strands and topics
- the strands are same from Elementary Prep to Elementary 2
- the topics for Elementary Prep is less than Elementary 1 and Elementary 2
- the knowledge, skills, attitudes and values are written as standards
- each standard in the syllabus has set of performance indicators that give the student what they should know and be able to do. These are all expressed in the scripted lessons that you will use to teach mathematics on daily basis
- the assessment task is also given for each topic so that you are progressively assessing student's competencies and achievements of standards. They are also shown in the lessons that you will use in this teacher guide.
- the syllabus also has the benchmark to work towards so that by the end of Elementary 2 students should be competent and qualified in mathematical knowledge, skills and attitudes and are able to move to grade 3 at primary level of schooling. These can be tested at the end of grade 2. When you assess assessment tasks the students should be able to achieve the bench making standards by the end of E2

Conditions of Learning

Teachers are required to provide the conditions of learning for students to enjoy the progress of teaching and learning in all lessons that they teach (a model of natural learning – refer to Teacher Guide, 2004)

The table below shows the seven conditions, what they mean and what teachers should provide and students should do in a Mathematics classroom

Conditions	What does this mean?	In mathematics
Immersion	Learners need to be surrounded with many learning materials and situations	Surround students with mathematics resources and materials – stones, sticks, shells, shapes, linking cubes, etc. these are all included in the resources section for each term.
Demonstration	Learners need to receive many demonstrations of how to do things	Teachers demonstrate how to count or group sets of objects etc. and show students how to do the activity. At the introduction and during supervision of the lesson activity.
Expectation	Learners receive messages from other people who help them to realise that they have the capacity to master certain skills	Students must look forward to what they will learn at the end of the lesson. Be able to take this skill and apply it or use it at home or in the community. Parents must hear their children counting numbers not only in school but also at home.
Responsibility	Learners make their own decisions about when, how and what to learn when given any learning task.	In mathematics scripted lesson activities everyone is expected to do the activities and they should be encouraged to decide and take responsibility of doing the activities during the lesson.
Use	Learners need time and opportunities to practise the skills and knowledge which they have learnt.	Students are given good time to and opportunities during the lesson to practice and display their skills. Take home work should be given in Elementary 2 classes.
Approximation	Learners must be allowed to make guesses about how to say things. It is quite acceptable for learners to make mistakes in order for learning to take place	During teacher and student interaction the learner must be allowed to make mistake to help him her learn from the mistake. Questions should be asked to help student learning.
Response	Learners learn from feedback that reinforces correct solutions or corrects mistakes. This feedback must be relevant and non-threatening.	At the end of the lesson time if given for feedbacks and assessment to see how well students are doing and learning. They must be appraised during and at the end of lessons.

Approaches of teaching and learning

Student – centred-approaches

Here are some ideas about student learning approaches that you should ensure they are implemented during teaching and learning with the student at Elementary 2 level.

What students should do during lessons	What teacher should do for teaching
<ul style="list-style-type: none">• Students should do more talking than teacher• Plenty of time given to their activities• Take part in many different activities that relate to real life experiences to develop critical thinking and understanding e.g. plenty of play activities• Discover new information on their own and with guidance from the teacher• Use an inquiry learning approach to explore a topic• Frequently work in small groups to cooperate with peers• Have a chance to evaluate their efforts• Use real objects to support learning• Choose activities and topics for their projects• Have a chance to correct their efforts• Choose who they will share the learning situation with	<ul style="list-style-type: none">• Play the role of a facilitator• Provides a rich learning environment for students' learning• Develop a supportive atmosphere in the classroom• Implement the daily lesson plans• Make resources available – prepare tasks for learning• Observe children and supervise their progress• Ask questions to assist children's learning• Appraise students efforts and shows how to improve from their mistakes• Is aware of what student's do, how they feel and respond with understanding• Is patient and gentle in his or her approach

Multigrade teaching

Usually teachers in a school would have one grade to teach for the whole year. In many communities the enrolments are low, so schools may have multigrade classes. This means that two or three different grades are grouped together and are supervised by one teacher. The classes are made up of students of different ages, abilities, interests and needs grouped together for learning.

A successful multigrade classroom provides opportunities for students to work in small groups, pairs, individually and as a whole class. The group work must have a purpose. One way of grouping is in ability groups based on the real needs identified. If students are experiencing difficulties, small groups will meet their needs. The tasks provided for each group needs to be challenging. The students must be clear about what they are expected to do and have them practise the skills while the teacher assists particular groups.

Learning and thinking strategies in mathematics

Strategy	Learning situation
Mental Mathematics Number Rhymes and songs	They develop Mental Mathematics skills in children Reinforce simple number bonds, number patterns, sequencing, conversation, ordering of number
Games Memorization games Number bonds game Shape games	Collecting of variety of games and rhymes develop children's enjoyment of mathematics Support Mental Mathematics Develop mental images of numbers, shapes etc.
Interactive story e.g. fraction story to reinforce half	Using puppets and toys to gain attention to reinforce the concepts.
Mathematical vocabulary; Oral work based on practical activities, reading aloud and silently, writing and recording in variety of ways, mathematics dictionary	Develops student's thinking in understanding spoken and written instructions, familiarity with Mathematical vocabulary, understand meaning of words in Mathematics Teacher and children can make Mathematics dictionary and use it in class
Response strategy – thumbs up – down- across	Method that allows students to self-assess their understanding – good to use in big classes to assess students quickly
Role Play (action/kinaesthetic)	Role play e.g. sharing objects for addition and division exercises
Visual clues Oral clues – Questioning about; Remembering facts Using facts Predicting Applying reasoning Interpreting results Designing and comparing procedures	Calculation on the board in reference to objects used in activity The use of questioning helps students to understand mathematical ideas and use the terms correctly- teacher may ask questions in different ways to help students pick up meaning of ideas and concepts. Teacher asking open and closed ended questions using appropriate Mathematical vocabulary develops higher order thinking skills and helps them to recall fact and helps them to give good answers and respond in appropriate ways
Class involvement Investigations and problem solving	Writing, answering questions, watching role play and actively participating in play activities These can be used in different ways to develop higher order skills such as reflection, analysis, being able to discuss and express themselves, help creative thinking skills, problem solving and developing and using language to think

PLANNING AND PROGRAMMING

Time Table.

Use the sample time table below to plan your teaching and learning plan for each week. Mathematics should be taught for 40 minutes per day

Time	Monday	Tuesday	Wednesday	Thursday	Friday
8.00 - 8.30am	Assembly and devotions				
8.30-9.30	Language	Language	Language	Language	Language
9.30-10.30	English	English	English	English	English
10.30 -11.00	Recess				
11.00 – 11.40	Maths lesson 1	Maths lesson 2	Maths lesson 3	Maths lesson 4	Maths lesson 5
11.40 -12.00	CRE	CRE	CRE	Maths lesson 6	CRE
12.00N -1.00	Lunch				
1.00-2.30pm	C & C	C & C	C & C	C & C	C & C

Time allocations per week	
Block Time (assembly and devotion)	150 minutes
Recess and lunch breaks	360 minutes
Home language	300 minutes
English	300 minutes
Mathematics	240 minutes
Culture and Community	450 minutes
Christian Religious Education	60 minutes
Total time per week	1770 minutes

Elementary 2 Yearly Plan for teaching and learning

This yearly plan is organised into terms with lesson topics which may be linked to the scripted lessons, however if topics do not link you are required to plan lessons using the scripted lessons as guides. Every elementary school will be teaching the same topics at the same week.

Week 1 is either orientation (Term 1) or revision of previous terms' learning.
Week 10 is to assess and report to parents on students' progress.

PLANNING AND PROGRAMMING

Weeks	Term 1	Term 2	Term 3	Term 4
1	Orientation	Revision last topic	Revision last topic	Revision last topic
2	Numbers up to 10,000 <ul style="list-style-type: none"> Make sets of 10s and 100s using easier representation such as seeds or rice Learn number of sets and name numbers in thousands e.g. How many sets of 100 Position the numbers on place value table in Thousand, hundreds, tens and units 	Multiplication up to 2 digit numbers <ul style="list-style-type: none"> Do repeated addition e.g. $4 + 4 + 4 = 12$ Compare and extend to multiplication by 1 digit number e.g. $4 + 4 + 4 = 12$ is same as $4 \times 3 = 12$ 	Units of Volume <ul style="list-style-type: none"> Comparing amount of water How to measure the amount of water 	Exploring circle and sphere <p>Circles</p> <ul style="list-style-type: none"> How to draw round shapes and name the properties of a circle e.g. circle is a round shape with distance from a centre point with radius of the same distance from the centre
3	Numbers up to 10,000 <ul style="list-style-type: none"> Make numbers more than 1000 using place value blocks Position on place value tables Count, Say and read the numbers Read and write numbers in Roman Numerals 	Multiplication up to 2 digit numbers <ul style="list-style-type: none"> Multiply by 20, 30 up to 90 e.g. $4 \times 20 = 80$ How to calculate 2 digit numbers \times 2 digit numbers e.g. 12×10 or 12×15 	Units of Volume <ul style="list-style-type: none"> Smaller Measuring cups Finding Amount 	Exploring Circles and Spheres <ul style="list-style-type: none"> Explore Radius and diameter with various circles
4	Numbers up to 10,000 <ul style="list-style-type: none"> Compare which number is larger using the signs $>$ or $<$ Sequence on number line and show on place value table. 	Multiplication up to 2 digit numbers <ul style="list-style-type: none"> Various ways of multiplication Multiplication by 20, 30...90 	Units of Volume <ul style="list-style-type: none"> Exercises and problems 	Exploring circle and Spheres <ul style="list-style-type: none"> Explore shape of a ball, from above, from side and roll Define a sphere Find out more about sphere as in circles with different sizes.

PLANNING AND PROGRAMMING

5	Numbers up to 10,000 <ul style="list-style-type: none"> connect numbers on map e.g. 1050 to 1051 Read, draw, write and compare numbers Find 10,000 using reams of paper or other easier representations (What is 10,000?) 	Multiplication up to 2 digit numbers <ul style="list-style-type: none"> Calculate 2-digit number x 2-digit number e.g. 12×15 Calculate 3 digit number x 2 digit number e.g. 120×15 	Time and Duration <ul style="list-style-type: none"> Say , count and read times on clock face Find what is one minute , 60 minutes and 1 hour 	Exploring circle and sphere Exercises and problems
6	Exercises Exercises such as read the following numbers; 7492, 2018, 6501, 8001 Problems problems such as write 8 sets of 1000 and 4 sets of 100 and 6 sets of 1	Multiplication up to 2 digit numbers <ul style="list-style-type: none"> Exercises Problems Revision 	Time and Duration Read on time line for time duration of activities	Exploring multiplication table <ul style="list-style-type: none"> Multiplication 1 for numbers up to 10
7	Numbers up to 10,000 <ul style="list-style-type: none"> Revision 	Addition, Subtraction and Multiplication problems <ul style="list-style-type: none"> With Math sentences of addition 	Time and Duration <ul style="list-style-type: none"> Read time line from yesterday, morning afternoon and tomorrow on 12 hour clock face 	Exploring multiplication table <ul style="list-style-type: none"> Multiplication 2 for tables of 2,5,3,4 Flash card games,
8	Multiplication up to 2 digit numbers <ul style="list-style-type: none"> Explore meaning of multiplication using easier representatives e.g. 3 mangoes each in 3 plates equals 9 mangoes What is multiplication? 	Addition, Subtraction and Multiplication problems; <ul style="list-style-type: none"> With Math sentences of multiplication 	Time and Duration <ul style="list-style-type: none"> Calculate time for different events and the meaning of 6 0'clock evening, 12 0'clock or noon day, 6 0'clock morning and 12 0'clock midnight. 	Exploring multiplication table <ul style="list-style-type: none"> Multiplication 3 for tables of 6,7,8,9 and of 1 Find their calculations
9	Multiplication up to 2 digit numbers <ul style="list-style-type: none"> Write multiplication sentences Use various ways to show order and write number sentences 	Addition, Subtraction and Multiplication problems. <ul style="list-style-type: none"> Addition and subtraction problems Exercises and problems 	Time and Duration <ul style="list-style-type: none"> Exercises and problems 	Exploring multiplication table <ul style="list-style-type: none"> Multiplication Table Multiplication Games Multiplication more than 9 x9 Exercises and problems
10	Assessment & Reporting	Assessment & Reporting	Assessment & Reporting	Assessment & Reporting

PLANNING AND PROGRAMMING

Weekly and daily objectives

Weekly and daily objectives have been written for you for every term. Use this to make sure your teaching is keeping pace with other schools.

Elementary 2 Term 1

Week	Standard	Day	Objective
1	Orientation, registration and revision		Get to know their school environment and settle into classroom. Assess what the children already know.
2	Count, read, write and order numbers 0-100 or more. Double and halve 2-50	Monday	Using a 100 square, count and read numbers from 0-50.
		Tuesday	Using a 100 square, count and read numbers from 0-100
		Wednesday	Count, read and write numbers from 0-100
		Thursday	Double the numbers from 1-15
		Friday	Double the numbers from 15 to 25
3	Compare and order sets of objects and numbers 0-100 Count from 1st -31st using a calendar.	Monday	Compare and order different sets of objects from 0-50.
		Tuesday	Compare and order different sets of objects from 0-100
		Wednesday	Count objects from 1st to 15th .
		Thursday	Count numbers from 1st -31st using calendars.
		Friday	Count from 1st to 31st confidently
4	Write numbers in hundreds, tens and units 0-100.	Monday	Write and recognize numbers in units. 0-50
		Tuesday	Write and recognize numbers in tens and units 50-100
		Wednesday	Write and recognize numbers in hundreds tens and units respectively.
		Thursday	Order two digit numbers from smallest to biggest
		Friday	Order two digit numbers from biggest to smallest
5	Break and combine number into hundreds, tens and units e.g. $75 = 70 + 5$ and $70 + 5 = 75$	Monday	Use base 10 materials to show any number between 1 and 50
		Tuesday	Use base 10 materials to show any number between 1 and 100
		Wednesday	Know the value of each digit in 2 digit numbers 0-50
		Thursday	Know the value of each digit in 2 digit numbers 50-99
		Friday	Break and combine 2 digit numbers 1-99 into tens and units eg $99 = 90 + 9$ and $90+9=99$

PLANNING AND PROGRAMMING

6	Add sets of objects and numbers 0-100 or more Make number sentences and stories and solve addition problems 0-100 or more	Monday	Add sets of object and numbers 0-50 with no renaming
		Tuesday	Add sets of object and numbers 0-100 with no renaming
		Wednesday	Make number sentences and stories for addition problems 0-50 with no renaming
		Thursday	Make number sentences and stories for addition problems 0-50 with no renaming
		Friday	Solve addition problems 0-100 with no renaming
7	Do repeated addition for number 10 Read and use +, - and =	Monday	Do repeat additions for numbers 1-5
		Tuesday	Do repeat additions for numbers 1-10
		Wednesday	Read and use +, - and =
		Thursday	Recognize the patterns made on a 100 square when doing repeat additions for 5
		Friday	Recognize the patterns made on a 100 square when doing repeat additions for 10
8	Make number sentences and stories to estimate and solve subtraction problems 0-100 or more	Monday	Estimate and solve subtraction problems 0-50 with no renaming
		Tuesday	Estimate and solve subtraction problems 0-100 with no renaming with no renaming
		Wednesday	Make up and solve number stories for subtraction problems 0-50 with no renaming
		Thursday	Recognize the patterns made on a 100 square when doing repeat subtractions of 5
		Friday	Recognize the patterns made on a 100 square when doing repeat subtractions of 10
9	Use mental arithmetic to solve simple addition and subtraction sums 0-100 or more	Monday	Write and recognize numbers in units. 0-50
		Tuesday	Write and recognize numbers in tens and units 50-100
		Wednesday	Write and recognize numbers in hundreds tens and units respectively.
		Thursday	Order two digit numbers from smallest to biggest
		Friday	Order two digit numbers from biggest to smallest
10	Assessment and reporting week		Report to parents on the children's assessment for this term

PLANNING AND PROGRAMMING

Elementary 2 Term 2

Week	Standard	Day	Objective
1	Orientation, registration and revision		Get to know their school environment and settle into classroom. Assess what the children already know.
2	Identify , describe and name the most common 2D shapes in the environment	Monday	Use the words sides, corners and angles to describe 2D shapes
		Tuesday	Listen to the description of a 2 D shape and draw it
		Wednesday	Use the words straight, curved, sides, corners and angles to describe 2D shapes
		Thursday	Recognize and draw 4 sided shapes in the environment that are not squares or rectangles
		Friday	Make and describe patterns using circles, ovals, and triangle
3	Divide into halves and quarters whole objects and sets of objects	Monday	Use the words 'whole' and 'half' correctly
		Tuesday	Can double and half numbers to 50 confidently
		Wednesday	Can divide a set of 20 or more objects into two halves
		Thursday	Show how to divide everyday shapes into halves and quarters
		Friday	Can divide sets of 20 or more objects into quarters
4	Give, follow and draw simple directions and maps within classroom and school settings including turning directions, using half and quarter turns Describe angles as more than or less than a right angle	Monday	Can follow simple directions including clockwise and anticlockwise
		Tuesday	Can give simple directions including clockwise, anticlockwise, $\frac{1}{4}$ turn, $\frac{1}{2}$ turn., right angle
		Wednesday	Follow and give directions to move from one place to another in the classroom including clockwise, anticlockwise, $\frac{1}{4}$ turn, $\frac{1}{2}$ turn., right angle
		Thursday	Give and follow instructions for drawing simple 2D shapes including clockwise, anticlockwise, right angle, more than a right angle, less than a right angle
		Friday	Give and follow instructions for drawing simple 2D shapes including clockwise, anticlockwise, right angle,
5	Identify two lines of symmetry in shapes and in the environment	Monday	Can identify a line of symmetry drawn through a 2D shape
		Tuesday	Can identify 2 lines of symmetry drawn through a 2D shape
		Wednesday	Can draw 2lines of symmetry through a 2D shape
		Thursday	Can recognise lines of symmetry in objects found in nature
		Friday	Can draw or paint symmetrical patterns with 2 lines of symmetry

PLANNING AND PROGRAMMING

6	Recognize odd and even number patterns Recognize and use number patterns in addition and subtraction from 0-50	Monday	Recognise even number patterns on a 100 square grid
		Tuesday	Recognise odd number patterns on a 100 grid
		Wednesday	Know that when two even numbers are added together the answer will be an even number
		Thursday	Know that when two odd numbers are added together the answer will be an even number
		Friday	Know that when an odd and even number are added together the answer will be an odd number
7	Work out missing numbers e.g. 4, 5, ..., 6 or $A + 4 = 8$	Monday	Identify numbers missing from a number line 0-50
		Tuesday	Identify numbers missing from a number line 0-100
		Wednesday	Work out a missing number in simple addition sums
		Thursday	Work out a missing number in simple subtraction sums
		Friday	Work out a missing number in simple addition and subtraction sums
8	Name, describe and compare solid shapes using mathematical names: cube; cuboid, sphere, cone and cylinder Identify 2D shapes in 3D shapes	Monday	Recognize and name cubes, cuboids, spheres, cones and cylinders
		Tuesday	Use the words straight, faces, corners, edges, angles to describe 3D shapes
		Wednesday	Describe the faces of 3D shapes using the words square, rectangle, triangle
		Thursday	Explain how 2D and 3D shapes are the same and how they are different
		Friday	Listen to the description of a 3D shape and name it
10	Assessment and reporting week		Report to parents on the children's assessment for this term

Elementary 2 Term 3

Week	Standard	Day	Objective
1	Revise Term 2 content		Revise Term 2 number content
2	Write numbers in hundreds, tens and units 0-100 Break and combine number into hundreds, tens and units e.g. $75 = 70 + 5$ and $70 + 5 = 75$	Monday	Read and write numbers between 50 and 100
		Tuesday	Use base 10 materials to show any number between 1 and 50
		Wednesday	Use base 10 materials to show any number between 1 and 100
		Thursday	Break, combine and write 2 digit numbers 0-50 into tens and units eg $53 = 50 + 3$ and $50 + 3 = 53$
		Friday	Break, combine and write 2 and 3 digit numbers 0-100 into hundreds, tens and units eg $99 = 90 + 9$ and $90 + 9 = 99$

PLANNING AND PROGRAMMING

3	Recognise notes to K100 and exchange and use coins up to K2 or more	Monday	Recognise K2, K5, K10, K20, K50 and K100 bank notes and all coins
		Tuesday	Exchange smaller bank notes for one bigger bank note e.g five K10 notes is the same as K50
		Wednesday	Exchange 5t, 10t, 20t, 50t and K1 coins for a K2 bank note
		Thursday	Show different ways of making K100 in bank notes
		Friday	Show different ways of making K2 in coins
4	Solve simple money problems	Monday	Put fruit and vegetables in order from cheapest to most expensive
		Tuesday	Calculate the cost of e.g. 5 items if one item costs K2
		Wednesday	Calculate how many items in a shop can be bought for K10
		Thursday	Calculate how many items in a shop can be bought for K50
5	Add sets of objects and numbers 0-100 or more	Monday	Estimate and solve addition problems 0-100 with no renaming
	Make number sentences and stories and solve addition problems 0-100 or more Do repeated addition for number 10	Tuesday	Use a number line to solve addition problems 0-50
		Wednesday	Use a number line to solve addition problems 0-100
		Thursday	Use mental arithmetic to solve addition problems 0-50
	Read and use +, - and	Friday	Use a number line to solve addition problems 0-100
6	Estimate, measure and record height, width and length using a metre ruler or rope Solve simple problems about length and height using 1m, $\frac{1}{2}$ m and $\frac{1}{4}$ m	Monday	Estimate and measure objects that are about 1m long or high
		Tuesday	Find two objects which together measure $\frac{1}{4}$ m, $\frac{1}{2}$ m, 1m
		Wednesday	Measure height and arm span using a metre ruler and find the relationship between the two
		Thursday	Measure around a tree trunk
		Friday	Tell how the length of their shadow changes during the day
7	Make number sentences and stories to estimate and solve subtraction problems 0-100 or more	Monday	Estimate and solve subtraction problems 0-100 with no renaming
	Use mental arithmetic to solve simple addition and subtraction sums 0-100 or more	Tuesday	Use a number line to solve subtraction problems 0-50
		Wednesday	Use a number line to solve problems 0-100
		Thursday	Use a number line to solve problems 0-50
		Friday	Use a number line to solve problems 0-100

PLANNING AND PROGRAMMING

8	Estimate, measure and record weight using a scale balance Solve simple weight problems using 1kg, $\frac{1}{2}$ kg $\frac{1}{4}$ g	Monday	Estimate, weigh and record how many $\frac{1}{4}$ kg bags of rice weigh 1Kg
		Tuesday	Estimate, weigh and record how many $\frac{1}{2}$ kg bags of rice weigh 2Kg
		Wednesday	Show different ways of making 2kg using $\frac{1}{4}$ kg and $\frac{1}{2}$ kg bags of rice
		Thursday	Show different ways of making 3kg using $\frac{1}{4}$ kg, $\frac{1}{2}$ kg and 1kg bags of rice
		Friday	Answer simple word problems involving weight
9	Estimate, measure and record weight using a scale balance Solve simple weight problems using 1kg, $\frac{1}{2}$ kg $\frac{1}{4}$ g	Monday	Estimate and measure the size of containers found in the home using $\frac{1}{4}$ L, $\frac{1}{2}$ L and 1L
		Tuesday	Estimate, measure and record how many $\frac{1}{4}$ L containers and $\frac{1}{2}$ L containers it will take to fill a 1L bottle
		Wednesday	Estimate, measure and record how many 1L containers it will take to fill a bucket
		Thursday	Answer simple word problems involving capacity
		Friday	Answer simple word problems involving capacity
10	Assessment and reporting week		Report to parents on the children's assessment for this term

Elementary 2 Term 4

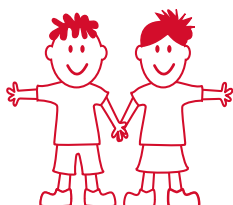
Week	Standard	Day	Objective
1	Revise Term 3 content		Revise Term 3 number content
2	Read day, date, month and year. Record how long daily events last eg; hours of darkness, morning lessons.	Monday	Knows the days of the week and months of the year
		Tuesday	Orders and sequences familiar events, eg; morning, recess, lunch, afternoon.
		Wednesday	Read the day, date, month and the year on a calendar.
		Thursday	Estimate and record how long some daily events last; hours of daylight, darkness, morning, afternoon, lunch break, mathematics lesson
		Friday	Read flash cards with days, dates, months and the year
3	Time Understand "quarter past" and "quarter to"	Monday	Cut out simple clock face and write in the numbers
		Tuesday	Show half past on the clock face and tell the time using 'half past'
		Wednesday	Show quarter past on the clock face and tell the time using 'quarter past'
		Thursday	Tell read the time using 'o'clock, half past and quarter past'
		Friday	Read the time using 'quarter to'

PLANNING AND PROGRAMMING

4	Subtract sets of objects and numbers 0-100 Read and use + , - and = signs	Monday	Subtract sets of objects and numbers 0-50
		Tuesday	Subtract sets of objects and numbers from 50-100
		Wednesday	Make number sentence and stories from numbers 0-50 using +, -, and =
		Thursday	Make number sentences and short stories from numbers 50-100 using +, -, and =
		Friday	Add sets of objects from 0-100 and make number sentences and short stories to solve subtraction problems.
5	Do repeated addition for number 10 Read and use +,- and = sign	Monday	Count objects to 50 and then count towards 100 using a number line.
		Tuesday	Read, use and recognise (+,- and =) in simple addition and subtraction
		Wednesday	Solve and write down repeat addition for 10 starting from any number
		Thursday	Use 100 square, say a number that is 10 less than a given number
		Friday	Use mental arithmetic to answer questions about 10 more and 10 less
6	Representing and Interpreting data. Select and sort real objects by three features eg; shape, colour and size.	Monday	Collect different objects from the surroundings and bring to the classroom.
		Tuesday	Select and sort these objects into 2 groups eg small and green.
		Wednesday	Select and sort these objects into 3 groups eg 'small', 'green' and 'small and green'
		Thursday	Select and sort these objects into 3 different groups eg 'hard' rough, and 'hard and rough' and draw their groups
		Friday	Do the tally of objects according to colour, shapes and sizes.
7		Monday	Make a whole class simple pictorial graph
		Tuesday	Answer simple questions about the information on the graph
		Wednesday	In a small group make and draw a simple pictorial graph
		Thursday	Ask and answer questions about the information on their graphs
		Friday	Write a sentence to say what their graph shows

PLANNING AND PROGRAMMING

8	Recognize and use number patterns in addition and subtraction from 0-100	Monday	Recognise number patterns in addition eg. $10+3=13$, $20+3=23$ etc
		Tuesday	Recognise 'fact families' for numbers to 10 eg $5+3=8$, $8-3=5$, $8-5=3$
		Wednesday	Recognise number patterns in subtraction eg $39-4=35$, $49-4=45$ etc
		Thursday	Recognise fact families for numbers to 20
		Friday	Explain how they recognise even and odd numbers
9	Work out missing numbers from longer patterns e.g. 3, 8, 13, ... or $B-X=10$	Monday	Write the next five numbers on a number pattern
		Tuesday	Make a number pattern for other children to extend
		Wednesday	Work out missing numbers in a number pattern e.g. 2,4, ? 8, ?
		Thursday	Work out missing numbers in simple addition problems eg $? + 5=10$, $?+12=17$
		Friday	Work out missing numbers in simple subtraction problems
10	Assessment and reporting week		Report to parents on the children's assessment for this term



DAILY LESSON PLANS

1 OBJECTIVE

Count, read, write and order numbers 1-100 or more. Double and halve 2-50

2 STARTER

Sing one little, two little, three little Indians...
, 10 green bottles, 5 little ducks, 5 little birdies
sitting on a tree

Chant: Show all fingers, I say 10, Show 5
fingers I say half, Show all fingers, I say 10,
Show 5 fingers, I say half, Show all fingers, I
say mine! Show 5 fingers, I say fine.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Teacher revises counting 0 to 100 or more first
the child's home language, then in English.
Introduce doubling numbers. E.g. $1 + 1 = 2$,
 $2 + 2 = 4$, up to $50 + 50 = 100$ on flash cards
and do a mental arithmetic double number
additions. E.g. a) $4 + 4 =$, b) $5 + 5 =$ c) $6 + 6 =$
up to 10

4 TEACHER AND STUDENT ACTIVITY

Teacher show again how to do double
numbers using objects in the child's language
and English. Group children in pairs so they
can count doubles to 100. Tell children to
count objects first in their language then in
English

Children work in pairs to count objects $1 + 1 =$
 2 , $2 + 2 = 4$, etc. Say them as they sort them
out

Prepare picture addition problems that add
doubles to make a number and some not. e.g.

$1 \text{ stone} + 1 \text{ stone} = 2 \text{ stones}$

$2 \text{ fish} + 2 \text{ fish} = 4 \text{ fish}$

$\text{Up to } 10 \text{ cats} + 10 \text{ cats} = 20 \text{ cats}$

Display children's work in the classroom

Prepare coloured 3D shapes for students to
string together.

Children string together two sets of 3D shapes
of the same number but must have two
different colours. For example 5 reds ones + 5
yellow ones.

Children make a comment about each other's
work.

5 CONCLUSION AND ASSESSMENT

Ask children to group two sets of object that
have equal numbers in each and give the
total number



1 OBJECTIVE

Count, read, write and order numbers 1-100 or more. Double and halve 2-50

2 STARTER

Sing one little, two little, three little Indians...
, 10 green bottles, 5 little ducks, 5 little birdies
sitting on a tree

Chant: Show all fingers, I say 10, Show 5
fingers I say half, Show all fingers, I say 10,
Show 5 fingers, I say half, Show all fingers, I
say mine! Show 5 fingers, I say fine.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Teacher revises counting 0 to 100 or more first
the child's home language, then in English.
Introduce doubling numbers. E.g. $1 + 1 = 2$,
 $2 + 2 = 4$, up to $50 + 50 = 100$ on flash cards
and Do mental arithmetic double number
additions.

4 TEACHER AND STUDENT ACTIVITY

Give mental exercises e.g. $22 + 22$, $33 + 33$
etc. Teacher show again how to do double
numbers using objects in the child's language
and English. Group children in pairs so they
can count doubles to 100 and count objects
first in their language then in English

Children work in pairs to count objects $1 + 1 = 2$,
 $2 + 2 = 4$, etc. Say them as they sort them
out

Prepare picture addition problems that add
doubles to make a number and some not. e.g.

$1 \text{ stone} + 1 \text{ stone} = 2 \text{ stones}$

$2 \text{ fish} + 1 \text{ fish} = 3 \text{ fish}$

$3 \text{ fish} + 3 \text{ fish} = 6 \text{ fish}$

Up to $10 \text{ cats} + 9 \text{ cats} = 19 \text{ cats}$

Children colour in pictures problems that
have double number additions and Display
children's work in the classroom

Prepare coloured 3D shapes for students
to string together. Pieces of rope of various
lengths

Children string together 4 sets of 3D shapes
of the same number but must have 4 different
colours. Two sets must have the same colour.
For example $5 \text{ reds ones} + 5 \text{ yellow ones} + 5$
 $\text{red ones} + 5 \text{ yellow ones}$.

Children to make a comment about each
other's work.

5 CONCLUSION AND ASSESSMENT

Ask children to group two sets of object that
have equal numbers of objects in each and
give the total number.



1 OBJECTIVE

Count, read, write and order numbers 1-100 or more. Double and halve 2-50

2 STARTER

Sing one little, two little, three little Indians...
, 10 green bottles, 5 little ducks, 5 little birdies
sitting on a tree.

Teach children the song on 'The animals went
in two by two' and 'All Mc Donald had a farm'
if they do not know it.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Teacher revises counting 0 to 100 first the
child's home language, then in English.
Children count their fingers and toes five times
in both the child's language and English. Do
mental arithmetic that can divide by 2. E.g. a) $\frac{1}{2}$
of 2 = b) $\frac{1}{2}$ of 4 =, up to 20

4 TEACHER AND STUDENT ACTIVITY

Give mental exercises e.g. half of 10, 20,
50, 100 etc. Teacher show how to write 0 to
100 in the correct sequence. Tell children to
count objects and say them aloud, first in their
language then in English and then write then
down.

Children sitting in pairs count objects 0-100
with the teacher then on their own. Then
write down numbers 0 to 100 in the correct
sequence.

Children colour the double number in the
addition problems.

Prepare picture division problems that can be
divide by 2 E.g.

$$2 \text{ marbles} \div 2 = 1 \text{ marble}$$

$$8 \text{ balls} \div 2 = 4 \text{ balls}$$

$$12 \text{ girls} \div 2 = 6 \text{ girls}$$

$$16 \text{ cars} \div 2 = 8 \text{ cars}$$

Display children's work in the classroom

Children comment on each other's work.

5 CONCLUSION AND ASSESSMENT

Ask children to write number 1 to 50 or 100 in
sequence quickly and show to you.



1 OBJECTIVE

Count, read, write and order numbers 1-100 or more. Double and halve 2-50

2 STARTER

Sing 'One little, two little, three little Indians'... , '10 green bottles', '5 little ducks', '5 little birdies sitting on a tree', 'The animals went in two by two' and 'All McDonald had a farm' if they do not know it.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Teacher introduces the idea of half to the students. For example, group 4 objects and take away 2 from the pile only 2 is left. Show flash cards that have subtraction problem like $4-2 = 2$, $6-3 = 3$, $8-4 = 4$ and children give the answers

4 TEACHER AND STUDENT ACTIVITY

Give mental exercises e.g. half of 10, 20, 30, 40 etc.

Teacher prepares games that teach taking away half of a pile or group of object leaving the same number on both sides. Group children in pairs to count 0 to 100 different

Children sitting in pairs count objects using different numbers that add up to 100 using objects in their piles.

Prepare picture subtraction problems that take away half the numbers. E.g. 10 dogs - 5 dogs = 5 dogs

50 cats - 25 cats = 25 cats

60 rats - 30 rats = 30 rats

30 birds - 15 birds = 15 birds

Children colour in the answers to the subtraction problem.

Display children's work in the classroom

Children comment on each other's work.



5 CONCLUSION AND ASSESSMENT

Ask children count out a set of even number and asked them to separate them into two equal groups. The ask them to hide one set and tell you how many are left. Explain the process to you in Tok Ples or English

1 OBJECTIVE

Count, read, write and order numbers 1-100 or more. Double and halve 2-50

2 STARTER

Sing 'One little, two little, three little Indians'... , '10 green bottles', '5 little ducks', '5 little birdies sitting on a tree', 'The animals went in two by two' and 'All Mc Donald had a farm' if they do not know it.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Teacher revises double and half numbers using flash cards with double number addition and finding half of numbers problems.

4 TEACHER AND STUDENT ACTIVITY

Give mental exercises e.g. half of 34, 58, 72, 98 and doubling numbers e.g., 25 to 25, 30 + 30 etc.

Teacher prepares flash cards with double number addition and half of numbers problems.

Children sitting in pairs count objects using different numbers that add up to 100 using objects in their piles.

Prepare picture addition that double numbers (addition of two same numbers) and half problems.

Children find the answer to the problems and draw the correct number of pictures in the answer section.

Prepare coloured 3D shapes for children to string together into patterns that show 4 reds, then 2 yellow then 4 reds then 2 yellows etc. Children can do 6-3-6-3 or 8-4-8-4 etc.

Children string together their number patterns

5 CONCLUSION AND ASSESSMENT

Ask children to add numbers that are the same and give the answer and solve half problems using objects from a pile.



1 OBJECTIVE

Compare and order sets of objects and numbers 0 to 100

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

2 STARTER

Revise odd and even number using game & song. For example:

Teacher play loud and whisper game with the children. Say odd numbers softly and even numbers loudly. For example 1- 100 both the child's language and English.

Sing number song- one little, two little, three little Indians and ten green bottles hanging on the wall. Sing verses with even numbers loudly and odd numbers softly.

3 INTRODUCTION

Teacher show the children how to group objects into sets and children guess which pile/heap has more or fewer.

4 TEACHER AND STUDENT ACTIVITY

Teacher prepares different size piles on the floor .

Children tell the teacher which pile has more or fewer and explain why they say a pile has fewer or more

Prepares worksheets with different piles/ number of objects set out in a row and have the children colour in the piles/groups that have more in each row.

String up objects in different lengths of strings and show children how to place them in order from few and more, long and short, big and small and then let them try doing it and display them



5 CONCLUSION AND ASSESSMENT

Show children flash cards with different piles s of objects. Children show to the teachers which pile has more or few and small or big pile. Explanations can be in their own language and English.

1 OBJECTIVE

Compare and order sets of objects and numbers 0 to 100

2 STARTER

Play loud and whisper game. Say odd numbers softly and even numbers loudly. For example

1 up to 100 in both the child's language and English.

Play up and down game. Sit when odd number is said and stand up when even number is said. For example: 1 sit, 2 stand, 3 sit, 4 stand, 5 sit, 6 stand etc. Go slowly during the first round and increase the speed during the second and increase even more during the third round.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Teacher show the children how to group objects into sets and children point out which piles/heaps have more or fewer, pieces of strings of different lengths and students point out which piece is long and which piece is short or boxes of different sizes and they point out which one is big and which one is small.

4 TEACHER AND STUDENT ACTIVITY

Prepare group of different size piles on the floor, collect boxes of different sizes and pieces of strings of different lengths and allow children to find which pile of objects has more or less/fewer, box is big and which one is small and pieces of strings are long and which piece is small and explain why?

Prepares worksheets with different piles/ number of objects set out in a row, different lengths of stringed objects and different size objects.

Prepares 3D shapes and long and short pieces of strings for children to string together two lots of 3D shapes on two different lengths of ropes so that they can have more of one colour and less of another colour or more of one shape and less of another shape.

Display them and allow children to comment on the displays.

5 CONCLUSION AND ASSESSMENT

Show children flash cards with different piles of objects, lengths of stringed objects and boxes of different sizes. Children show to the teachers which pile of objects has more or few, which object is small or big and which length of stringed objects is short and which is long. Explanations can be in their own language and English.



1 OBJECTIVE

Compare and order sets of objects and numbers 0 to 100

2 STARTER

Play loud and whisper game. Say odd numbers softly and even numbers loudly. For example

1 up to 100 in both the child's language and English.

Play up and down game. Sit when odd number is said and stand up when even number is said. For example: 1 sit, 2 stand, 3 sit, 4 stand, 5 sit, 6 stand etc. Go slowly during the first round and increase the speed during the second and increase even more during the third round 1 up to 100 in both the child's language and English can be used here.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Teacher show the children two flash cards with two different numbers. Which one has more or which one has fewer. Children point out which number is more and which one has fewer and explain why they have given such an answer.

4 TEACHER AND STUDENT ACTIVITY

Teacher prepares sufficient flash cards for the class (10 for each group) that show different numbers. Ask the children to work in pairs and show each other two numbers and their friends say which one has fewer and explain why they have given such an answer.

Prepares worksheets that have any set of five numbers between 0-100 and ask children to colour in the lowest and highest number only in each row.

Prepare 3D shapes and pieces of strings for children to string together different numbers of 3D shapes to make patterns. E.g. 2 red, 3 blue, 4 yellow, 5 green, 6 white etc.



5 CONCLUSION AND ASSESSMENT

Show children flash cards with sets of numbers and children point out which number is the highest and which one is the lowest.

1 OBJECTIVE

Compare and order sets of objects and numbers 0 to 100

2 STARTER

Teacher show the children flash cards with 5 sets of numbers. Ask the children to point out which number in the lowest and reorder the five numbers from lowest to highest. E.g. of flash card has 25, 16, 37, 88, 3. The children will reorder the sequence to 3, 16, 25, 37, 88.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Teacher introduces the idea of half to the students. For example , group 4 objects and take away 2 from the pile only 2 is left. Show flash cards that have subtraction problem like $4-2 = 2$, $6-3 = 3$, $8-4 = 4$ and children give the answers

4 TEACHER AND STUDENT ACTIVITY

Prepare sufficient flash cards (5 sets for each pair) with five sets of numbers between 0 to 100 e.g. 44, 4, 24, 34, 14 and multiple cards with single numbers 0 to 100 and in pair have the children to work in pairs reorder the numbers from the lowest to the highest e.g. 4, 14, 24, 34, 44 etc.

Prepare worksheets that have any set of five numbers between 0-100 e.g., 5, 7, 3, 1, 9; 90, 60, 70, 100, 80; 75, 45, 15, 25, 55; etc and ask children to write out the numbers from the lowest to the highest.

Prepare 3D shapes and pieces of strings for children to string together different numbers of 3D shapes to make patterns. E.g. 2 red, 3 blue, 4 yellow, 5 green, 6 white etc.



5 CONCLUSION AND ASSESSMENT

Ask children to write the correct sequence – lowest to the highest two sets of five numbers.

1 OBJECTIVE

Compare and order sets of objects and numbers 0 to 100

2 STARTER

Sing a number song- a little, two little, three little Indians...

Play loud and whisper game. Say odd numbers softly and even numbers loudly. For example 1 up to 100 in both the child's language and English.

Play up and down game. Sit when odd number is said and stand up when even number is said. For example: 1 sit, 2 stand, 3 sit, 4 stand, 5 sit, 6 stand etc. Go slowly during the first round and increase the speed during the second and increase even more during the third round from 1 up to 100 in Both the child's language and English can be used here.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Revision: Teacher shows the children flash cards with 5 sets of numbers. Ask the children to point out which number is the lowest and reorder the five numbers from lowest to highest. E.g. of flash card has 25, 24, 21, 23, 22. The children will reorder the sequence to 21, 22, 23, 24, 25.

4 TEACHER AND STUDENT ACTIVITY

G Teacher prepares sufficient flash cards (5 sets for each pair) with five sets of numbers between 0 to 100 e.g. 10, 6, 9, 7, 8 and multiple cards with single numbers 0 to 100.

In pairs, children work with the single card numbers and reorder the numbers from the lowest to the highest e.g. 6, 7, 8, 9, 10 etc. on the floor or on top of their desks.

Prepare worksheets that have any set of five numbers between 0-100 e.g., 50, 10, 30, 40, 20; 5, 1, 3, 2, 4; 75; etc and ask children to write out the numbers from the lowest to the highest.

Prepares 3D shapes and pieces of strings for children to string together different numbers of 3D shapes to make patterns. E.g. 2 red, 3 blue, 4 yellow, 5 green, 6 white etc.



5 CONCLUSION AND ASSESSMENT

Ask children to write the correct sequence – lowest to the highest two sets of five numbers.

1 OBJECTIVE

Place Value: counting in 10s

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

2 STARTER

Sing a number song- a little, two little, three little Indians... and ten green bottles...

Game: ten children are needed for this game. Start off with 1 child and say, Me, just 1 have 10 fingers, add another one and say, Me and 1 friend have 20 fingers, add another one and say Me and 2 friends have 30 fingers...Me and 3 friends have 40 fingers, continue this up to 10th Child and understand that 10 of us have 100 fingers!

3 INTRODUCTION

Teacher shows the children how to count in sets of 10 to 100 using objects from treasure box, e.g. using bottle tops show children how to group them into 10 sets of 10 and count 10, 20, 30 ... to 100.

4 TEACHER AND STUDENT ACTIVITY

Prepares a chart with 10 times tables and a lot of objects for children to use when count in 10s to 100 and ask children in pairs to refer to chart when grouping their objects into ten sets of 10 and remind to check that all the sets add up to 100 when counted individually(refer to 10 times table chart)

Prepares worksheets that have various counting in sets of 10s problems for children to solve using their pile of objects. Ask the children to write the answers on their sheets of paper. E.g. 10 balls + 10 balls = ; 10 fish + 10 fish + 10 fish =

Teacher prepares 3D shapes and pieces of strings for children to string together sets of 10s of 3D shapes to make patterns. E.g. 10 red, 10 blue, 10 yellow, 10 red, 10 blue, 10 yellow etc.

Display work and children make comments on each other's artwork.

5 CONCLUSION AND ASSESSMENT

Ask children to count in 10s to 100.



1 OBJECTIVE

Place Value: counting in 10s

2 STARTER

Teacher shows the children again how to count in sets of 10 to 100 using objects from treasure box, e.g. using bottle tops show children how to group them into 10 sets of 10 and count 10, 20, 30 ... to 100.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Teacher show the children how to group objects into sets and children point out which piles/heaps have more or fewer, pieces of strings of different lengths and students point out which piece is long and which piece is short or boxes of different sizes and they point out which one is big and which one is small.

4 TEACHER AND STUDENT ACTIVITY

Teacher recites 10 times tables on the wall chart then in pairs asks children to group objects in 10s until they reach 100, counting aloud as they group them

Prepare worksheets that have various counting in sets of 10s problems for children to solve using their pile of objects and ask the children to write the answers on their sheets of paper. E.g. 10 rats+ 10 rats = ; 10 birds + 10 birds + 10 birds + 10 birds =

Prepares 3D shapes and pieces of strings for children to string together sets of 10s of 3D shapes to make patterns. E.g. 10 red, 10 blue, 10 yellow, 10 red, 10 blue, 10 yellow etc.

Display work and children make comments on each other's artwork

5 CONCLUSION AND ASSESSMENT

Give children a number (10, 20, and 30 up to 100) and ask children to group sets of ten objects to reach that number. E.g. 4 sets of 10 bottle tops make 40 bottle tops.



1 OBJECTIVE

Place Value: counting in 10s

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

2 STARTER

Sing a number song- a little, two little, three little Indians... and ten green bottles...

Game: ten children are needed for this game. Start off with 1 child and say, Me, just 1 have 10 fingers, add another one and say, Me and 1 friend have 20 fingers, add another one and say Me and 2 friends have 30 fingers...Me and 3 friends have 40 fingers, continue this up to 10th and understand that 10 of us have 100 fingers!

3 INTRODUCTION

Teacher shows the children again how to count in sets of 10 to 100 using objects from treasure box, e.g. using bottle tops show children how to group them into 10 sets of 10 and count 10, 20, 30 ... to 100.

4 TEACHER AND STUDENT ACTIVITY

Teacher recites 10 times tables on the wall chart then in pairs asks children to group objects in 10s until they reach 100. Ask children to refer to (10 times table) chart when grouping their objects into ten sets of 10. Remind children to check that all the sets add up to 100 when counted individually.

Prepare worksheets that have sets of five numbers for students to organise from the lowest to the highest number e.g. 15, 20, 25, 10, 5 and ask the children to write the answers on their sheets of paper. E.g. 5, 10, 15, 20, 25.

Teacher prepares 3D shapes and pieces of strings for children to string together sets of 5s or 10s 3D shapes to make patterns. E.g. 10/5 red, 10/5 blue, 10/5 yellow, 10/5 red, 10/5 blue, 10/5 yellow etc.

Display work and children make comments on each other's artwork.

5 CONCLUSION AND ASSESSMENT

Give children a set of five number e.g. 25, 45, 35, 30, 40 and ask children to organise them from the lowest to the highest number.



1 OBJECTIVE

Place Value: counting in 5s and 10s

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

2 STARTER

Sing a number song- a little, two little, three little Indians... and ten green bottles...

Game: ten children are needed for this game. Start off with 1 child and say, Me, just 1 have 10 fingers, add another one and say, Me and 1 friend have 20 fingers, add another one and say Me and 2 friends have 30 fingers...Me and 3 friends have 40 fingers, continue this up to 10th and understand that 10 of us have 100 fingers!

3 INTRODUCTION

Teacher shows the children again how to count in sets of 10 to 100 using objects from treasure box, e.g. using bottle tops show children how to group them into 10 sets of 10 and count 10, 20, 30 ... to 100.

4 TEACHER AND STUDENT ACTIVITY

Teacher recites 10 times tables on the wall chart then in pairs asks children to group objects in 10s until they reach 100. Ask children to refer to (10 times table) chart when grouping their objects into ten sets of 10. Remind children to check that all the sets add up to 100 when counted individually.

Children work in pairs to group objects into 20 sets of 5s and ten sets of 10s on the floor or on top of their desks and count aloud as they group them and double check their answers against the 5 and 10 times table chart.

Prepare worksheets that have sets of five numbers for students to organise from the lowest to the highest number e.g. 15, 20, 25, 10, 5. Ask the children to write the answers on their sheets of paper. E.g. 5, 10, 15, 20, 25.

Teacher prepares 3D shapes and pieces of strings for children to string together sets of 5s or 10s 3D shapes to make patterns. E.g. 10/5 red, 10/5 blue, 10/5 yellow, 10/5 red, 10/5 blue, 10/5 yellow etc.

Display work and children make comments on each other's artwork

5 CONCLUSION AND ASSESSMENT

Give children a set of five numbers e.g. 25, 45, 35, 30, 40 and ask children to organise them from the lowest to the highest number.



1 OBJECTIVE

Place Value: counting in 5s and 10s

2 STARTER

Sing a number song- a little, two little, three little Indians... and ten green bottles...

Game: ten children are needed for this game. Start off with 1 child and say, Me, just 1 have 10 fingers, add another one and say, Me and 1 friend have 20 fingers, add another one and say Me and 2 friends have 30 fingers...Me and 3 friends have 40 fingers, continue this up to 10th and understand that 10 of us have 100 fingers!

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Teacher revises with the children again how to count in sets of 5s and 10s to 100 using objects from treasure box, e.g. using bottle tops show children how to group them into 10 sets of 10 and count 10, 20, 30 ... to 100.

4 TEACHER AND STUDENT ACTIVITY

Teacher recites 10 times tables on the wall chart then in pairs asks children to group objects in 10s until they reach 100. Ask children to refer to (10 times table) chart when grouping their objects into ten sets of 10. Remind children to check that all the sets add up to 100 when counted individually.

Children work in pairs to group objects into 20 sets of 5s and ten sets of 10s on the floor or on top of their desks and count aloud as they group them and double check their answers against the 5 and 10 times table chart.

Prepares worksheets with additions exercises and ask the children to write the answers on their sheets of paper. E.g. $5 + 10 =$, $15 + 20 =$, $25 + 10 =$ etc.

Teacher prepares 3D shapes and pieces of strings for children to string together sets of 5s or 10s 3D shapes to make patterns. E.g. 10/5 red, 10/5 blue, 10/5 yellow, 10/5 red, 10/5 blue, 10/5 yellow etc.

Display work and children make comments on each other's artwork.

5 CONCLUSION AND ASSESSMENT

Give children two numbers to add together and give the answer e. g $5 + 5 =$, $10 + 10 =$, $10 + 15 =$ $25 + 35 =$ etc.



1 OBJECTIVE

Place Value: Break and combine numbers

2 STARTER

Sing a number song- a little, two little, three little Indians... and ten green bottles...

Game: ten children are needed for this game. Start off with 1 child and say, Me, just 1 have 10 fingers, add another one and say, Me and 1 friend have 20 fingers, add another one and say Me and 2 friends have 30 fingers...Me and 3 friends have 40 fingers, continue this up to 10th Child and understand that 10 of us have 100 fingers!

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Teacher shows the children how to break number and then combine them again e.g. $75 = 70 + 5$ and $70 + 5 = 75$, $85 = 70 + 15$ and $70 + 15 = 85$.

4 TEACHER AND STUDENT ACTIVITY

Prepares a chart with 10 times tables and a lot of objects for children to use when count in 5s and 10s to 100.

Ask children to refer to chart when breaking and combining given numbers at the same time reminding children to check that the two numbers that are combined to make a number must add up e.g. $70 + 15 = 85$.

They can work on the combined numbers from prepared work sheets to break up into two numbers that add up the given numbers. E.g. $85 = 70 + 15$ and $70 + 15 = 85$. Also $85 = 60 + 25$ and $60 + 25 = 85$. Use objects from the treasure box for combining and breaking numbers.

Teacher prepares 3D shapes and pieces of strings for children to string together sets of 10s of 3D shapes to make patterns. E.g. 10 red, 10 blue, 10 yellow, 10 red, 10 blue, 10 yellow etc.

Display work and children make comments on each other's artwork.

5 CONCLUSION AND ASSESSMENT

Ask children to count in 10s to 100.



1 OBJECTIVE

Place Value: Break and combine numbers

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

2 STARTER

Sing a number song- a little, two little, three little Indians... and ten green bottles...

Game: ten children are needed for this game. Start off with 1 child and say, Me, just 1 have 10 fingers, add another one and say, Me and 1 friend have 20 fingers, add another one and say Me and 2 friends have 30 fingers...Me and 3 friends have 40 fingers, continue this up to 10th Child and understand that 10 of us have 100 fingers!

3 INTRODUCTION

Teacher revises how to break number and then combine them again e.g. $75 = 70 + 5$ and $70 + 5 = 75$, $85 = 70 + 15$ and $70 + 15 = 85$.

4 TEACHER AND STUDENT ACTIVITY

Prepare additional combining and breaking numbers worksheets for students to explore various combinations of numbers that add up for a one number. E.g. $85 = 70 + 15$ and $70 + 15 = 85$. Also $85 = 60 + 25$, $60 + 25 = 85$. Also $85 = 40 + 45$, $40 + 45 = 85$ etc.

Ask children to refer to chart when breaking and combining given numbers. Remind children to check that the two numbers that are combined to make a number must add up e.g. $70 + 15 = 85$.

Teacher prepares 3D shapes and pieces of strings for children to string together sets of 10s of 3D shapes to make patterns. E.g. 10 red, 5 blue, 10 yellow, 10 red, 5 blue, 10 yellow etc.

Display work and children make comments on each other's artwork

5 CONCLUSION AND ASSESSMENT

Ask children to combine and break a given number. E.g. $85 = 70 + 15$ and $70 + 15 = 85$.



1 OBJECTIVE

Place Value: Break and combine numbers

2 STARTER

Sing a number song- a little, two little, three little Indians... and ten green bottles...

Game: ten children are needed for this game. Start off with 1 child and say, Me, just 1 have 10 fingers, add another one and say, Me and 1 friend have 20 fingers, add another one and say Me and 2 friends have 30 fingers...Me and 3 friends have 40 fingers, continue this up to 10th Child and understand that 10 of us have 100 fingers!

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Teacher revises how to break number and then combine them again e.g. $75 = 70 + 5$ and $70 + 5 = 75$, $85 = 70 + 15$ and $70 + 15 = 85$.

4 TEACHER AND STUDENT ACTIVITY

Prepares additional combining and breaking numbers worksheets for students to explore various combinations of numbers that add up for a one number. E.g. $85 = 70 + 15$ and $70 + 15 = 85$. Also $85 = 60 + 25$, $60 + 25 = 85$. Also $85 = 40 + 45$, $40 + 45 = 85$ etc.

Ask children to refer to chart when breaking and combining given numbers. Remind children to check that the two numbers that are combined to make a number must add up e.g. $70 + 15 = 85$.

Teacher prepares 3D shapes and pieces of strings for children to string together sets of 10s of 3D shapes to make patterns. E.g. 10 red, 5 blue, 10 yellow, 10 red, 5 blue, 10 yellow etc.

Display work and children make comments on each other's artwork.



5 CONCLUSION AND ASSESSMENT

Ask children to combine and break a given number. E.g. $85 = 70 + 15$ and $70 + 15 = 85$.

1 OBJECTIVE

Place Value: Break and combine numbers

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

2 STARTER

Sing a number song- a little, two little, three little Indians... and ten green bottles...

Game: ten children are needed for this game. Start off with 1 child and say, Me, just 1 have 10 fingers, add another one and say, Me and 1 friend have 20 fingers, add another one and say Me and 2 friends have 30 fingers...Me and 3 friends have 40 fingers, continue this up to 10th Child and understand that 10 of us have 100 fingers!

3 INTRODUCTION

Teacher revises how to break number and then combine them again e.g. $75 = 70 + 5$ and $70 + 5 = 75$, $85 = 70 + 15$ and $70 + 15 = 85$.

4 TEACHER AND STUDENT ACTIVITY

Teacher prepares combining and breaking numbers problem solving worksheets. E.g.

$$85 = 70 + xx \text{ and } 70 + xx = 85.$$

$$85 = 60 + xx \text{ and } 60 + xx = 85.$$

$$85 = 40 + xx \text{ and } 40 + xx = 85$$

$$85 = 20 + xx \text{ and } 20 + xx = 85$$

Remind children to check that the two numbers that are combined to make a number must add up e.g. $70 + 15 = 85$. Ask the children to work in pairs for this exercise. Encourage children to use objects from the treasure box for combining and breaking numbers.

Teacher prepares 3D shapes and pieces of strings for children to string together sets of 10s of 3D shapes to make patterns. E.g. 10 red, 5 blue, 10 yellow, 10 red, 5 blue, 10 yellow etc.

Display work and children make comments on each other's artwork

5 CONCLUSION AND ASSESSMENT

Ask children to combine and break a given number. E.g. $85 = 70 + 15$ and $70 + 15 = 85$.



1 OBJECTIVE

Place Value: Break and combine numbers

2 STARTER

Sing a number song- a little, two little, three little Indians... and ten green bottles...

Game: ten children are needed for this game. Start off with 1 child and say, Me, just 1 have 10 fingers, add another one and say, Me and 1 friend have 20 fingers, add another one and say Me and 2 friends have 30 fingers...Me and 3 friends have 40 fingers, continue this up to 10th Child and understand that 10 of us have 100 fingers!

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Do a mental test - break number and then combine them again using 10 e.g. a) $10 = 5 + x$ and $5 + x = 10$, b) $10 = 6 + x$ and $6 + x = 10$, c) $10 = 7 + x$ and $7 + x = 10$, d) $10 = 8 + x$ and $8 + x = 10$, e) $10 = 9 + x$ and $9 + x = 10$

4 TEACHER AND STUDENT ACTIVITY

Teacher prepares combining and breaking numbers problem solving worksheets using the number 100. For example:

$$100 = 50 + xx \text{ and } 50 + xx = 100.$$

$$100 = 60 + xx \text{ and } 60 + xx = 100.$$

$$100 = 70 + xx \text{ and } 70 + xx = 100$$

$$100 = 80 + xx \text{ and } 80 + xx = 100$$

$$100 = 90 + xx \text{ and } 90 + xx = 100$$

Remind children to check that the two numbers that are combined to make a number must add up e.g. $40 + 60 = 100$. Ask the children to work in pairs for this exercise. Encourage children to use objects from the treasure box for combining and breaking numbers.

Teacher prepares 3D shapes and pieces of strings for children to string together sets of 10s of 3D shapes to make patterns. E.g. 10 red, 5 blue, 10 yellow, 10 red, 5 blue, 10 yellow etc.

Display work and children make comments on each other's artwork.



5 CONCLUSION AND ASSESSMENT

Ask children to combine and break a given number. E.g. $100 = 70 + xx$ and $70 + xx = 100$

1 OBJECTIVE

Add sets of object and numbers 0 to 50 with no renaming

2 STARTER

Play I say, you say. Your rule is 'double the number' e.g. I say 2, you say 4. Repeat with other numbers up to 10.

Change the rule to 'half the number', e.g. I say 10 you say 5. Repeat for even numbers up to 20.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

On the board draw 3 circles, one with 19 balls, one with 6 balls and one with 4 balls.

Show different ways, e.g. $19 + 6 = 25$; $25 + 4 = 29$ or $6 + 4 = 10$; $10 + 19 = 29$. Ask if one way is easier.

Repeat with 7, 26 and 3 balls.

Explain that if they know number facts to 10 then this will help them with addition problems.

4 TEACHER AND STUDENT ACTIVITY

Put children into pairs. Write 10 addition sums on the board similar to the ones above. Tell the children to work out the answers by thinking of the number facts to 10 that will help them.

Move around the class assessing the children by listening to them. Give help where needed. If some children are finding it too easy give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their additions. Ask them to tell the number fact to 10 that helped them. Does the class agree with their answer and the way they did it?

Repeat with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Add sets of object and numbers from 0 to 100 with no renaming.

2 STARTER

Prepare addition cards which have answers of 6, 7, 8 or 9.

Have different addition cards for the same answer, e.g. $1 + 5 =$, $2 + 4 =$, $3 + 3 =$; $4 + 2 =$, etc.

Tell the children to put their hands behind their backs.

Shuffle the cards and show one to the children. They should show the answer on their fingers as fast as they can.

Repeat the activity for each card.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

On the board write $50 + 10 =$

Ask the children to guess what the answer will be [60].

Count forwards on a 1 to 100 number square, showing $50 + 10 = 60$. Check to see if their guess was correct. Explain how when you add 10, you go down one line on the number square.

Write $50 + 20 =$

Ask the children to guess the answer, then use the number square to find the answer [70]. Explain how when adding 20, you go down 2 lines on the number square.

Write $30 + 60 =$

Ask the children if it will be easier to start at 30 and add 60 or to start at 60 and add 30. Remind them that in addition you can add the numbers in any order.

Repeat with $53 + 10 =$ [63] and $64 + 20 =$ [84].

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their additions. Ask them for their answer and how they did it.

Check to see if the class agrees with their answer and the way they did it.

Repeat with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Write 10 addition problems on the board, e.g. $58 + 20 =$ and $45 + 30 =$

Tell them to guess the answers and then use the number square to find the answer.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.



1 OBJECTIVE

Make number sentences and stories for addition problems from 0 to 50 with no renaming.

2 STARTER

Count forwards in tens from 10 to 100 and backwards from 100 to 10 using a number square.

Repeat the activity, starting from other numbers, e.g. 3 or 4, counting forwards and backwards in tens.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Tell the children a number story, e.g. 'The shop ordered 20 red pencils, 10 blue pencils and 10 yellow pencils. How many pencils did the shop order altogether?'

Tell the children to think about the important words, e.g. '20 red pencils', '10 blue pencils', '10 yellow pencils' and 'how many altogether'.

Ask, 'What will you have to do to find the answer - add or subtract?' Ask, 'Which words told you what to do?' ['How many altogether'].

Use a number square to find the answer [40].

Write the number sentence on the board and read it out $20 + 10 + 10 = 40$.

Remind the children of the question, 'How many pencils did the shop order?', and tell them that the answer is 40 pencils.

Repeat with another story or the same story with different numbers, e.g. $13 + 20 + 10 =$, $10 + 30 + 9 =$ and $8 + 10 + 20 =$.

5 CONCLUSION AND ASSESSMENT

Pick one pair to tell their number story. Ask them which words were important and how they worked it out.

Check to see if the class agrees with their answer and the way they did it.

Repeat with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Tell them to make up their own number stories and to find the answers.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.



1 OBJECTIVE

Make number sentences and stories for addition problems from 0 to 50 with no renaming.

2 STARTER

On the board write a number between 50 and 100.

Ask the children to say the number out loud.

Ask what is 1 more and what is 1 less than that number.

Then ask, 'What is 2 more what is 2 less?' and 'What is 3 more what is 3 less?'

Repeat for other numbers between 50 and 100.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Tell the children a number story, e.g. 'On the bus there were 15 men, 10 women and 10 children. How many people were on the bus altogether?'

Ask the children to think about the important words: '15 men', '10 women', '10 children' and 'how many altogether'. Ask, 'What will you have to do to find the answer - add or subtract?' Ask, 'Which words told you what to do?' ['How many altogether']. Ask them to guess the answer and then work it out using a number square.

Write the number sentence on the board and read it out loud: $15 + 10 + 10 = 35$.

Remind the children of the question: 'How many people were on the bus altogether?' The answer is 35 people.

Repeat with another story or the same story with different numbers, e.g. $13 + 3 + 10 = [26]$.

5 CONCLUSION AND ASSESSMENT

Pick one pair to tell their number story.

Ask them which words were important and how they worked it out.

Ask if the class agrees with their answer and the way they did it.

Repeat this activity with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Record this information in the class assessment folder.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Tell them to make up their own number stories and to find the answers.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.



1 OBJECTIVE

Make number sentences and stories for addition problems from 0 to 50 with no renaming.

2 STARTER

On the board write a number between 50 and 100.

Ask the children to say the number out loud.

Ask what is 1 more and what is 1 less than that number.

Then ask, 'What is 2 more what is 2 less?' and 'What is 3 more what is 3 less?'

Repeat for other numbers between 50 and 100.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Tell the children a number story, e.g. 'On the bus there were 15 men, 10 women and 10 children. How many people were on the bus altogether?'

Ask the children to think about the important words: '15 men', '10 women', '10 children' and 'how many altogether'. Ask, 'What will you have to do to find the answer - add or subtract?' Ask, 'Which words told you what to do?' ['How many altogether']. Ask them to guess the answer and then work it out using a number square.

Write the number sentence on the board and read it out loud: $15 + 10 + 10 = 35$.

Remind the children of the question: 'How many people were on the bus altogether?' The answer is 35 people.

Repeat with another story or the same story with different numbers, e.g. $13 + 3 + 10 = [26]$.

5 CONCLUSION AND ASSESSMENT

Pick one pair to tell their number story.

Ask them which words were important and how they worked it out. Ask if the class agrees with their answer and the way they did it.

Repeat this activity with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Record this information in the class assessment folder.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Tell them to make up their own number stories and to find the answers.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.



1 OBJECTIVE

Do repeated additions for numbers from 1 to 5.

2 STARTER

Play 'addition Bingo'.

Show the children how to draw a 3 x 2 grid in their books.

Tell them to choose 6 numbers between 1 and 9 and write one number in each box on the grid.

Ask, 'What do we add to 35 to make 40?' [5].

Tell them to put a ring around that number if you have it.

Repeat with similar questions, e.g. 'What do we add to 53 to make 60?' [7].

The first to ring all numbers wins by calling out, 'Bingo!'

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Tell them that you are going to do repeated additions for the number 2.

Start at 2. With the children say, '2 plus 2 equals 4', '4 plus 2 equals 6' and so on up to 20. Repeat slowly then repeat quickly.

Start at 3 and count on in twos, saying, '3 plus 2 equals 5', '5 plus 2 equals 7' and so on up to 21.

4 TEACHER AND STUDENT ACTIVITY

Tell the children you are going to count around the class in twos.

Start with one child who says ' $2 + 2 = 4$ ', and the next child says ' $4 + 2 = 6$ ' and so on around the whole class.

Now tell the first child to say ' $1 + 2 = 3$ ', the next child says ' $3 + 2 = 5$ ' and so on.

Repeat for repeat additions of 5, e.g. $5 + 5 = 10$.

Assess the children by listening to them. Give help where needed.

5 CONCLUSION AND ASSESSMENT

Show the children a number card between 1 and 50 and tell them that the rule is to 'add 2'. Ask what the answer is.

Repeat with other number cards.

Change the rule to 'add 5'.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

To learn the 10 times table.

2 STARTER

Put 10 pegs on a coat hanger.

Ask the children to count them.

Ask them to close their eyes, and then remove 3 pegs.

Ask them to open their eyes and work out how many pegs you have taken away.

Repeat this, taking away a different number of pegs each time.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Together, count from 10 to 100 in 10s. Tell the children that today they are going to learn their 10 times multiplication table and that multiplying is another way of doing repeat additions.

Show them 1 bundle of 10 sticks and say, 'There is 1 bundle of sticks. 1 lot of 10 is 10'. Tell the children to say, '1 lot of 10 is 10'. Show a second bundle of sticks and say, 'There are 2 bundles of 10 sticks. Two lots of 10 are 20.' Tell the children to say, '2 lots of 10 are 20.' Repeat for bundles of sticks up to 10 bundles.

Together say, '1 lot of 10 is 10, 2 lots of 10 is 20...' up to 10 lots of 10 is 100. Tell them that a quicker way to say 'lots of' is 'times'.

In a column on the board write $1 \times 10 = 10$, $2 \times 10 = 20$ up to $10 \times 10 = 100$.

With the children, say '1 times 10 is 10, 2 times 10 is 20' and so on. Repeat until the children are confident.

Shuffle the 10 times table flashcards. Show a card to the children. Ask them for the answer.

5 CONCLUSION AND ASSESSMENT

Shuffle the 10 times table flashcards.

Show one to the children. Ask who can tell you the answer.

Repeat for all the other flashcards.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.

4 TEACHER AND STUDENT ACTIVITY

Tell the children to write the 10 times table in their books.

Tell them to work in pairs to ask each other 10 times table questions.

Move around the class assessing the children by listening to them. Give help if needed.



1 OBJECTIVE

Read and use '+', '-' and '=' symbols.

2 STARTER

Play 'I am, you are.'

Explain that your rule is 'add 10'.

Say, 'I am 3, you are?' The child you point at should answer 'I am 13 because 13 is 10 more than 3.'

Repeat this using different numbers.

Change the rule, e.g. 'add 3'.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

Peg the '+' symbol onto a line.

Ask how many different ways you can read this + sign in a number sentence.

Peg the flashcards for 'add' and 'plus' on the line next to the '+' symbol.

Point to each word and ask everyone to say it.

Repeat with the '-' sign and peg 'subtract', 'take away', 'minus' flashcards on the line.

Repeat with the '=' sign and peg 'equals' and 'is the same as' on the line.

Point to one of the '+', '-' and '=' flashcards and ask a child to tell you one way of reading the sign, then ask another child a different way.

Repeat by pointing to different flashcards.

5 CONCLUSION AND ASSESSMENT

Show a flashcard for '+', '-' or '=' signs and ask a child to read it, then ask another child to tell you a different way to say it.

Repeat with the other signs.

Ask one pair to read out one of the number sentences on the board. Repeat with other pairs.

Make a note of those children not able to read the number sentences and those finding it too easy. Use this information when you plan tomorrow's lesson.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Write 10 number sentences on the board.

Ask the first child to read a number sentence and ask the second child to try and read it in a different way.

Repeat this activity for all of the number sentences on the board.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.



1 OBJECTIVE

Recognise the patterns made on a 100 square when doing repeat additions of 5.

2 STARTER

Play 'More than or less than?'

Tell the children you are thinking of a number between 40 and 50.

They should guess your number by asking 'more than' and 'less than questions', e.g. 'Is it more than 45?' If the answer is yes, remind them that your number must be 46, 47, 48 and 49.

They continue asking by 'more than' and 'less than' questions until they find your number.

Repeat with another number.

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

As a class, count from 5 to 100, adding 5 each time. Repeat this more quickly.

Ask the children if they can tell you anything special about the numbers they said [the numbers end in 0 or 5].

Show a 100 number square and start doing repeated additions of 5, starting at 1.

Together say, ' $1 + 5 = 6$ ' and ' $6 + 5 = 11$ '. Continue until you reach 96. Colour in 6, 11 and so on up to 96.

Ask the children what patterns they can see [coloured numbers form 2 straight lines down the number square and they are 5 squares apart]. Repeat for repeated additions starting with 2.

Tell the children to colour these numbers in a different colour.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show their number square.

Ask them which number they started on. Check with the class if they have coloured in the correct squares.

Ask if they can tell you the pattern. Check to see if the class agrees.

Repeat with 2 more pairs who have started from different numbers.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs. Give them a 1 to 100 number square.

Tell them to choose which number to start from and to keep adding 5 until they come to a number close to 100. Tell them to colour the squares they land on. Ask them what pattern they make.

Move around the classroom, assessing the children by listening to them. Give help if needed. If some children are finding it too easy, give them more difficult problems.



1 OBJECTIVE

Recognise the patterns made on a 100 number square when doing repeated additions of 10.

2 STARTER

Play 'addition Bingo'.

Show the children how to draw a 3 x 2 grid in their books.

Tell them to choose 6 numbers between 1 and 9 and write one number in each box on the grid.

Ask, 'What do we add to 32 to make 37?' [5].

Tell them to put a ring around that number if you have it.

Repeat with similar questions, e.g. 'What do we add to 51 to make 60?' [9].

The first to ring all numbers wins by calling out, 'Bingo!'

LESSON TOPIC: Numbers up to 10 000

STRAND: Number and Operation

CONTENT STANDARD: 2.1.1

3 INTRODUCTION

As a class, count from 10 to 100, adding 10 each time. Repeat this more quickly.

Ask the children if they can tell you anything special about the numbers [the numbers end in 0].

Show a 100 number square.

Do repeated additions of 10 starting at 1.

Say, ' $1 + 10 = 11$ and $11 + 10 = 21$ '.

Continue until you reach 91.

Colour in 1, 11 and so on up to 91.

Ask the children what patterns they can see [coloured numbers form a straight line down the number square].

4 TEACHER AND STUDENT ACTIVITY

Put children into pairs. Give them a 1 to 100 number square.

Tell them to choose which number to start from and to keep adding 10 until they come to a number close to 100.

Tell them to colour the squares that they land on. Ask, 'What pattern do they make?'

Move around the classroom, assessing the children by listening to them. Give help if needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show their number square. Ask them which number they started on.

Ask the class if they have coloured in the correct squares and if they can tell you the pattern.

Repeat with 2 more pairs who have started from different numbers.

Make a note of those children not able to solve the problems and those finding it too easy. Record this information in the class assessment folder.



1 OBJECTIVE

Estimate and solve subtraction problems, from 0 to 50, with no renaming.

2 STARTER

Play 'I am, you are' with the children.

The rule is 'you are double the number I am', e.g. 'I am 6, you are 12'.

Change the rule to 'you are half the number I am', e.g. 'I am 18, you are 9'.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Write $28 - 7 =$ on the board.

Ask the children if it is an addition or subtraction problem. Ask them to guess the answer [21].

Tell them that another word for 'guess' is 'estimate'.

Show the children that if they took 8 away from 28 the answer would be 20 so the answer to $28 - 7$ is close to 20.

If they get an answer of about 30 or about 10 they know they have made a mistake.

Reveal the answer as $28 - 7 = 21$. Explain how this is close to their estimate of 20.

Repeat the estimating activity with $49 - 8 =$ [41, estimate of 40].

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Write 10 subtraction problems on the board.

Tell them to estimate the answer and write their estimate in their books, then do the proper subtraction and write down the number sentence.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their subtraction problems.

Ask them to give their estimate and then the answer from their number sentence.

Check to see if the class agrees with their estimate and their answer.

Repeat with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Estimate and solve subtraction problems, from 0 to 100, with no renaming.

2 STARTER

Count 10 pegs on a hanger.

Ask the children to close their eyes whilst you remove 5.

Ask, 'How many have been taken away?'

The children should hold up 5 fingers.

Repeat this activity, taking away different numbers.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Write $78 - 7 =$ on the board.

Ask the children if it is an addition or subtraction problem. Ask the children to guess the answer. Remind them that another word for 'guess' is 'estimate'.

Show them that if they take 8 away from 78 the answer would be 70 so the answer to $78 - 7$ is close to 70.

If they get an answer of close to 80 or 60 they know they have made a mistake.

Reveal the answer as $78 - 7 = 71$. Explain how this is close to their estimate of 70.

Repeat the estimating activity with $97 - 6 =$ [91, estimate of 90].

Use a 1 to 100 number square if the children need it.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their subtraction problems.

Ask them to give their estimate and then the answer from their number sentence.

Check to see if the class agrees with their estimate and their answer.

Repeat with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Write 10 subtraction problems on the board.

Tell them to estimate the answer and write their estimate in their books, then do the proper subtraction and write down the number sentence.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.



1 OBJECTIVE

Make up and solve number stories for subtraction problems, from 0 to 50, with no renaming.

2 STARTER

Sing number songs with the children that involve counting backwards, e.g. '10 green bottles standing on the wall' or '10 little birds sitting on a branch'.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Tell the children a subtraction number story, e.g. 'There were 40 peanuts in a basket. A hungry little rat came along and ate 8 of them. A bird then flew over and ate 4 more. How many peanuts were left?' [28]

Ask the children how they will solve it, using addition or subtraction. Ask them which words helped them to know it was a subtraction, e.g. 'how many were left?'

Ask the children what number sentence you should write on the board.

Write $40 - 8 =$

Ask the children to tell you the answer [32]. Ask what the next number sentence should be.

Write $32 - 4 =$

Ask the children to tell you the answer [28].

Remind them that the question was 'How many peanuts were left?', so the answer is 28 peanuts. Repeat with different numbers or make up a different story.

Use a 1 to 100 number square if the children need it.

5 CONCLUSION AND ASSESSMENT

Pick one pair to tell one of their number stories to the rest of the class.

Ask to see if the class can solve the problem. Check if they have the same answer as the pair.

Repeat with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs. Tell them to make up their own subtraction number stories and to solve them.

Tell them to write the number sentences in their books.

Move around the classroom, assessing the children by listening to them. Give them help where needed. If some children are finding it too easy, give them more difficult problems.



1 OBJECTIVE

Recognise the patterns made on a 100 number square when doing repeated subtractions of 5.

2 STARTER

Say, 'I'm thinking of a number between 1 and 20'.

Ask the children to find the number by asking 'more than' or 'less than' questions.

Help them to think of good questions, e.g. Asking 'Is it less than 10?' is a better question than 'Is it less than 3?' This is because 'Is it less than 10' removes 9 numbers from the game, but 'is it less than 3' removes only 2 numbers.

Repeat this activity using different numbers between 1 and 20.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Show the children a 1 to 100 number square and tell them that they are going to do repeated subtractions of 5 starting at 100.

Explain that repeated subtractions of 5 means that they will take 5 away from each answer.

Colour the number 100. Tell the children to count backwards by 5 on the number square.

Write $100 - 5 = 95$.

Colour in 95 and repeat, counting backwards an additional 5.

Continue this activity until you get back to 5. Check to see that the children can see the pattern.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Give each pair of children a 1 to 100 number square.

Tell them to do repeated subtractions of 5.

Tell half of the class to start at 99 and half to start at 98.

Ask if they think the pattern will be the same or different.

Tell the children to colour in the answers on their number square and write the number sentences in their books.

5 CONCLUSION AND ASSESSMENT

Pick one pair who started at 98 to show their number squares.

Ask them to describe the pattern. Ask, 'Is it the same as your first number square?'

Repeat with a pair who started at 99.

Make a note of those children not able to see the pattern and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Recognise the patterns made on a 100 number square when doing repeated subtractions of 5.

2 STARTER

Children count from 2 to 100 and backwards again in twos. Repeat more quickly.

Count from 5 to 100 and back again in fives. Repeat more quickly.

Count from 10 to 100 and back again in tens. Repeat more quickly.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

In the playground draw a big 1 to 100 number square.

Tell the children they are going to do repeated subtractions of 10 starting at 100.

Put one child on 100. Count backwards by 10. Put another child on 90.

Say $100 - 10 = 90$.

Continue this activity until you get to 10.

Ask the children to describe the pattern they have made.

Start this activity on 99 and repeat.

4 TEACHER AND STUDENT ACTIVITY

In the classroom, put the children into pairs. Give them a 1 to 100 number square.

Tell them to do repeated subtractions of 10.

Tell half the class to start at 96 and half at 97.

Ask if they think their pattern will be the same or different.

Ask the children to colour in the answers on their number squares and write the number sentences in their books.

5 CONCLUSION AND ASSESSMENT

Pick one pair who started at 96 to show their number squares.

Ask them to describe the pattern. Ask them if it is the same as their first number square.

Ask them what all their numbers end in [6 and 1].

Repeat with a pair who started at 97.

Make a note of those children not able to see the pattern and those finding it too easy. Record this information in the class assessment folder.



1 OBJECTIVE

To learn the 2 times table.

2 STARTER

Show a 1 to 100 number square with 10 numbers covered.

Ask the children which numbers are covered.

Repeat the activity with 10 different numbers covered.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Tell the children that today they are going to learn their 2 times multiplication table.

Tell them that multiplying is another way of doing repeated additions. Ask them to count from 2 to 20 in twos.

Write on the board:

2	● ●					
4	● ●	● ●				
6	● ●	● ●	● ●			
8	● ●	● ●	● ●	● ●		
10	● ●	● ●	● ●	● ●	● ●	● ●

Point to 2 and count the circles and say, 'There is one lot of circles. One lot of 2 is 2.'

Tell the children to say, 'One lot of 2 is 2.'

Point to 4 and the circles and say, 'There are 2 lots of circles, 2 lots of 2 is 4.'

Tell them to say, '2 lots of 2 is 4'.

Do the same for 6, 8 and 10.

Together say, 'One lot of 2 is 2, 2 lots of 2 is 4,' and so on to 5 lots of 2 is 10.

Tell them that a quicker way to say 'lots of' is 'times'.

In a column on the board write $1 \times 2 = 2$, $2 \times 2 = 4$, $3 \times 2 = 6$, $4 \times 2 = 8$, $5 \times 2 = 10$ and with the children say, 'One times 2 is 2, 2 times 2 is 4' and so on.

Now continue for 12, 14, 16, 18 and 20.

5 CONCLUSION AND ASSESSMENT

Bring 2 children to the front.

Together with the class say, 'One times 2 is 2'.

Bring 2 more children to the front.

Together say, '2 times 2 is 4'.

Continue to '10 times 2 is 20'.

Make a note of those children finding it difficult and those finding it too easy. Use this when planning tomorrow's lesson.

4 TEACHER AND STUDENT ACTIVITY

Practise saying the 2 times table.

Tell children to copy the 2 times table into their books.

Shuffle the 2 times table flashcards. Show them 1 card. Ask them what the answer is.

Repeat with other flashcards.



1 OBJECTIVE

Use mental arithmetic strategies to solve simple addition and subtraction problems, from 0 to 50.

2 STARTER

Say the 2 times table together.
Shuffle the 2 times table flashcards.
Show one card and ask the children to write down the answer.
Check to see if they are correct.
Repeat the activity with more flashcards.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

On the board write the sum $14 + 20 =$
Ask if it is an addition or subtraction problem.
Tell the children that they need to find the answer using mental arithmetic.
Remind them of different techniques to do this.
They could count on from 14 in 10s, e.g. 14, 24, 34.
They could also break 14 into $10 + 4$, then add 10 to 20 and then add 4 to 30.
Repeat this activity using different numbers.

4 TEACHER AND STUDENT ACTIVITY

Write $35 - 20 =$
Ask the children if it is an addition or subtraction problem. Ask them how they could solve it.
Tell them they could count back in ones, using their fingers, or they could count backwards in tens.
Put the children into pairs.
Write 5 addition and 5 subtraction problems on the board.
Tell them to work in pairs to solve the problems using mental arithmetic.
Move around the classroom, assessing the children by listening to them and giving help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their problems.
Ask them for their answer and to explain the way they did it.
Ask the class if they agree with the answer and how they did it.
Repeat with 2 more pairs of children.
Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Explain the mental arithmetic strategies they have used to solve addition and subtraction problems from 0 to 50.

2 STARTER

Say the 2 times table together.
Shuffle the 2 times table flashcards.
Show one card and ask the children to write down the answer.
Check to see if they are correct.
Repeat with other 2 times table flashcards.
Repeat the activity with the 10 times table flashcards.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

On the board write the sum $46 - 20 =$

Ask if it is an addition or subtraction problem.

Tell the children that they must find the answer using mental arithmetic. Ask how they could do it.

Remind them how to count back in tens by remembering 46 and using their fingers to count backwards.

Write the answer $46 - 20 = 26$.

Write $34 + 30 =$

Ask if it is an addition or subtraction problem.

Ask how they could solve it. Explain that they could count on from 34 in tens, so 44, 54, 64. Or they could break 34 into $30 + 4$. They could add 30 and 30 then add 4 to 60.

Write the answer $34 + 30 = 64$

Repeat using different numbers.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their problems.
Ask them for their answer and to explain the way they did it.
Ask the class if they agree with the answer and how they did it.
Repeat with 2 more pairs of children.
Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Write 5 addition and 5 subtraction problems on the board.

Tell them to work in pairs to solve the problems using mental arithmetic.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.



1 OBJECTIVE

Use mental arithmetic strategies to solve simple addition and subtraction problems from 0 to 100.

2 STARTER

Peg number cards from 1 to 20 on a line.
Together with the children, count on from 1 to 20 and backwards from 20 to 1.
Tell the children to close their eyes and move 2 of cards.
Ask them to open their eyes and say which cards have been moved.
Ask them how they found the answer.
Repeat by moving different cards.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

On the board write $6 + 3 =$.

Ask, 'What is the answer?' [9]

Underneath, write $56 + 3 =$, $66 + 3 =$ and $76 + 3 =$

Remind them that if they know their number factors of 10 it can help when they add bigger numbers.

Ask the answers to answer all of the sums.
Ask if they can see the pattern.

Repeat with $2 + 5 =$, $42 + 5 =$, $62 + 5 =$ and $82 + 5 =$.

Do this activity with subtractions.

Write $8 - 6 =$, $58 - 6 =$, $48 - 6 =$, $38 - 6 =$

Repeat with other numbers.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Write 5 addition and 5 subtraction problems on the board.

Tell them to work out the answers by thinking of the number factor of 10 will help them.

Write their number sentences in their books.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their problems.
Ask them their answer and to explain the number factor that helped them.
Ask the class if they agree.
Repeat with 2 more pairs of children.
Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Explain the mental arithmetic strategies they have used to solve addition and subtraction problems from 0 to 100.

2 STARTER

Say the 2 times table together.
Shuffle the 2 times table flashcards.
Show one card and ask the children to write down the answer.
Check to see if they are correct.
Repeat with other 2 times table flashcards.
Repeat the activity with the 10 times table flashcards.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

On the board, draw 3 circles, one with 10 balls, one with 3 balls and one with 1 ball.

Ask the children how many balls there are altogether [14].

Ask one child to explain how she or he did it, then ask another child.

Check to see if they did it in the same way.

Ask them to say if one way is better than another.

Show different ways of adding the balls, e.g. $10 + 3 = 13$, $13 + 1 = 14$ or $3 + 1 = 4$ and $10 + 4 = 14$.

Repeat with 9, 6 and 4 balls.

Show the children the different ways of adding these, e.g. $9 + 6 = 15$, $15 + 4 = 19$ or $6 + 4 = 10$ and $10 + 9 = 19$.

Ask them to say if one way is better than another. Explain that knowing the number factor of 10 can help.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their problems.
Ask them their answer and to explain how they did it.
Ask the class if they agree.
Repeat with 2 more pairs of children.
Make a note of those children not able to solve the problems and those finding it too easy. Record this information in the class assessment folder.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Write 5 addition and 5 subtraction problems on the board.

Tell them children to work out the answers and write the number sentences in their books.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.



1 OBJECTIVE

Use the words 'sides', 'corners' and 'angles' to describe 2D shapes.

2 STARTER

Say the 2 and 10 times tables.

Repeat them very quietly then repeat them very quickly.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Show the children different triangles.



Ask the name of the shapes.

Ask them to describe the shapes. They should identify that they have 3 sides, 3 corners and 3 angles. Tell the children that an angle is the shape made when 2 lines meet.

Ask how the triangles are the same and how they are different.

Repeat for 4 sided shapes, including rectangles.



Tell them that in a rectangle, the opposite sides are the same length and the angles are all the same.

5 CONCLUSION AND ASSESSMENT

Put a shape in a box or bag so the children cannot see it.

Ask one child to put his or her hand into the bag and describes the shape.

Ask the other children guess the name of the shape from the description.

Repeat this with other shapes.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lessons.

4 TEACHER AND STUDENT ACTIVITY

Show the children a circle.

Ask them if they can see anything in the classroom that is the same shape.

Ask them what words can be best used to describe the shape.

Repeat this activity for other shapes.



1 OBJECTIVE

Listen to the description of a 2D shape and draw it.

2 STARTER

Say the 2 and 10 times tables.

Repeat them very quietly then repeat them very quickly.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Show some 2D shapes to the children and point to the sides, corners and angles.

Write the words 'triangle', 'rectangle', 'circle' and 'four sided shape' on the board.

4 TEACHER AND STUDENT ACTIVITY

Tell the children that you are going to describe a shape and they have to draw this shape on a sheet of paper.

Use the words 'sides', 'corners' and 'angles' in your description.

Help them by repeating your description slowly as they draw.

Repeat this for all of the shapes: triangle, circle, rectangle and square.

When they have completed their drawings, give them scissors to cut out their shapes.

Make a display in the classroom of all the triangles, circles, rectangles and other 4 sided shapes they have drawn.



5 CONCLUSION AND ASSESSMENT

Show the children a triangle and ask them to describe it using the words 'sides', 'angles' and 'corners'. Repeat for other 2D shapes.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lessons.

1 OBJECTIVE

Use the words 'straight', 'curved', 'sides', 'corners' and 'angles' to describe 2D shapes.

2 STARTER

Take the children outside. Tell them to follow your directions.

Tell them to walk forward 10 steps and turn to the right. Walk forward 10 steps and turn to the right. Walk forward 10 steps and turn to the right. Walk forward 10 steps.

Ask them what shape they have made [a square].

Repeat the activity with a different shape.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Put the children into 2 groups.

Call out the name of a 2D shape and ask the groups to put themselves into that shape.

Ask them to describe their shapes using the words 'straight', 'curved', 'sides', 'corners' and 'angles'.

Repeat for other 2D shapes.

4 TEACHER AND STUDENT ACTIVITY

Back inside the classroom, ask the children to name shapes that have:

- a curved line
- 3 straight lines
- 4 angles, etc.

5 CONCLUSION AND ASSESSMENT

Show a 2D shape.

Ask the children to describe it using the words 'straight', 'curved', 'sides', 'angles' and 'corners'.

Repeat for other 2D shapes.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lessons.



1 OBJECTIVE

Recognise and draw 4 sided shapes that are not squares or rectangles.

2 STARTER

Put the children into a large circle and give each child a number card.

Tell each child to look at their card and place it face down in front of them.

Call the names of 2 children.

Explain that they must show their number cards and try to be the first to add the 2 numbers and say the answer.

Repeat with other pairs of children.

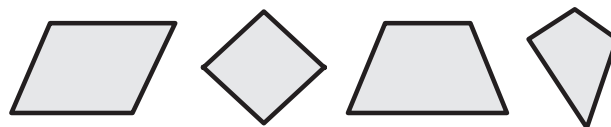
LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Show the children 4 sided shapes that are not squares or rectangles.



Talk to the children about the shapes.

Ask them how they are the same as a square or rectangle and how they are different.

Tell them that you are going to go outside to look for these shapes in the local environment.

Remind the children that a square is a special type of rectangle where all the sides are the same length.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs and go outside.

Ask them to look around them to see if they can find any of these 4 sided shapes in the buildings or anything else they can see in the playground.

Tell them that if they see any, they should draw them in their books.

5 CONCLUSION AND ASSESSMENT

Back in the classroom, share the drawings the children have made.

Check to see if they have identified different 4 sided shapes.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lessons.



1 OBJECTIVE

Make and describe patterns using circles, ovals and triangles.

2 STARTER

Play the game 'Simon says', using left and right instructions, e.g. 'Simon says touch your left knee' or 'Simon says put your right hand in the air' or 'Simon says hop on your right foot.'

When you do not say 'Simon says' before the action, the children should not do the action.

If they did, they should sit down.

LESSON TOPIC: Multiplication up 2 digit numbers

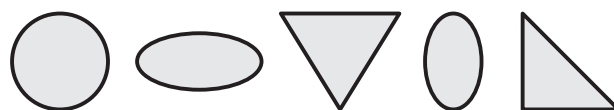
STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Write the words 'straight', 'curved', 'side', 'corner' and 'angle' on the board.

Show the children circles, ovals and triangles.



Ask them to describe the shapes using the words you have written on the board.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Tell them to make a pattern using different circles, triangles and ovals.

They should draw the pattern on a sheet of paper and colour the pattern in.

Make a display of the patterns in the classroom.



5 CONCLUSION AND ASSESSMENT

Ask the children to show the patterns that they have made.

Check to see if they can describe their pattern correctly.

Make a note of those who couldn't do this and those that found it too easy. Write assessment notes and put them in the class assessment folder.

1 OBJECTIVE

Fractions

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

2 STARTER

Sing a number song- a little, two little, three little Indians... and ten green bottles...

Chant

Show all fingers, I say 10, Show 5 fingers I say half, Show all fingers, I say 10, Show 5 fingers, I say half, Show all fingers, I say mine! Show 5 fingers, I say fine.

3 INTRODUCTION

Bring hard paper shapes (circles, triangles and squares) that can be folded in half for the lesson. Fold them to show half. Hold up a shape and say 1 whole. Fold into four and say four quarters. Open and say whole, fold in half and say two halves. Fold into four and say four quarters.

4 TEACHER ACTIVITY

Teacher cuts out different shapes from hard paper if possible for children to fold in half and quarters. Each child will have two shapes to work with. Remind the children to bring coloured pencils if the school does not have any.

Teacher prepares 3D shapes and pieces of strings for children to string together sets of 4s and 2s of 3D shapes to make patterns. E.g. 4 red, 2 blue, 4 red, 2 blue, 4 red, 2 blues etc.



4 STUDENT ACTIVITY

Children fold one of their shapes in half and one in quarters and colour them in. Use two different colours to colour in the different parts. Create a pattern when colouring in the one with quarters. E.g. red, white, red, white or green, yellow, green, yellow or red, black, red, black etc.

Children string together sets 4s and 2s of 3D shapes to make patterns. E.g. 4 red, 2 blue, 4 red, 2 blue, 4 red, 2 blues etc.

Display work and children make comments on each other's artwork.



5 CONCLUSION AND ASSESSMENT

Ask children to fold pieces into 2 equal halves and 4 equal quarters. Ask them many halves make 1 whole, how many quarters make one whole and how many quarters make half.

1 OBJECTIVE

Fractions

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

2 STARTER

Sing a number song- a little, two little, three little Indians... and ten green bottles...

Chant

Show all fingers, I say 10, Show 5 fingers I say half, Show all fingers, I say 10, Show 5 fingers, I say half, Show all fingers, I say mine! Show 5 fingers, I say fine.

3 INTRODUCTION

Children count out 100 objects from treasure box to work with. Children work in pairs. Teacher asks the children to separate their piles of objects into two equal piles. Ask the children how many objects are in each pile- 50. Explain to the children that $50 + 50 = 100$, Half of 100 is 50. Ask the children to now group their objects into four equal parts. Ask the children how many objects are in each pile- 25. Explain to the children that $25 + 25 + 25 + 25 = 100$, One quarter of 100 is 25, two quarters or half of 100 is 50, three quarters of 100 is 75, and four quarters is 100.

4 TEACHER AND STUDENT ACTIVITY

Teacher prepares worksheet for half and quarters problems. For example

$$\frac{1}{2} \text{ of } 4 = \quad \frac{1}{4} \text{ of } 20 = \quad \frac{3}{4} \text{ of } 20 =$$

$$\frac{1}{2} \text{ of } 10 = \quad \frac{1}{4} \text{ of } 40 = \quad \frac{3}{4} \text{ of } 40 =$$

$$\frac{1}{2} \text{ of } 50 = \quad \frac{1}{4} \text{ of } 80 = \quad \frac{3}{4} \text{ of } 80 =$$

$$\frac{1}{2} \text{ of } 100 = \quad \frac{1}{4} \text{ of } 100 = \quad \frac{3}{4} \text{ of } 100 =$$

Teacher encourages children to use their pile of objects to work out the answers.

Teacher prepares worksheet with shapes that are divided into halves and quarters.

Teacher prepares 3D shapes and pieces of strings for children to string together sets of 4s and 2s of 3D shapes to make patterns. E.g. 4 red, 2 blue, 4 red, 2 blue, 4 red, 2 blues etc.

4 STUDENT ACTIVITY

Children do the exercises.

Children colour in half ($\frac{1}{2}$) of the shapes

Children string together sets 4s and 2s of 3D shapes to make patterns. E.g. 4 red, 2 blue, 4 red, 2 blue, 4 red, 2 blues etc.

Display work and children make comments on each other's artwork.

5 CONCLUSION AND ASSESSMENT

Ask children to show $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ of 100.



1 OBJECTIVE

Fractions

2 STARTER

Sing a number song- a little, two little, three little Indians... and ten green bottles...

Recite

2 and 4 times tables.

Chant

Show all fingers, I say 10, Show 5 fingers I say half, Show all fingers, I say 10, Show 5 fingers, I say half, Show all fingers, I say mine! Show 5 fingers, I say fine.

Revise $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ of numbers between 4 to 100.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Children count out 100 objects from treasure box to work with. Children work in pairs.

Teacher asks the children to separate their piles of 10, 20, 30, 40, 50, 60, 70, 80, 90 and 100 objects into 2 equal piles, e.g.

$1 + 1 = 2$, $2 + 2 = 4$, $3 + 3 = 6$, $4 + 4 = 8$, $5 + 5 = 10$, $10 + 10 = 20$, $15 + 15 = 30$, $20 + 20 = 40$, $25 + 25 = 50$, $30 + 30 = 60$, ... $50 + 50 = 100$ etc. These numbers when divided into two/half piles always gives an equal number in each pile.

Teacher asks the children to separate their piles of 4, 8, 12, 16, 20, 24 ... 100 objects into 4 equal piles. Ask the children how many objects are in each pile e.g. $2 + 2 + 2 + 2 = 8$, $3 + 3 + 3 + 3 = 12$, $4 + 4 + 4 + 4 = 16$, $5 + 5 + 5 + 5 = 20$, ... $10 + 10 + 10 + 10 = 40$, $20 + 20 + 20 + 20 = 80$, $25 + 25 + 25 + 25 = 100$.

4 TEACHER ACTIVITY

Teacher prepares worksheet for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, problems. For example

$\frac{1}{2}$ of 8 =	$\frac{1}{4}$ of 8 =	$\frac{3}{4}$ of 8 =
$\frac{1}{2}$ of 14 =	$\frac{1}{4}$ of 12 =	$\frac{3}{4}$ of 12 =
$\frac{1}{2}$ of 16 =	$\frac{1}{4}$ of 16 =	$\frac{3}{4}$ of 16 =
$\frac{1}{2}$ of 20 =	$\frac{1}{4}$ of 20 =	$\frac{3}{4}$ of 20 =

Teacher encourages children to use their pile of objects to work out the answers.

Teacher prepares worksheets with circles that show half and quarter fractions. In the ones that show half, draw equal number of things in each half. In circles that show quarters, draw an equal number of things in each quarter e.g. Four fish in each one, so a full circle will show 16 fish altogether.



5 CONCLUSION AND ASSESSMENT

Ask children to show $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ of numbers that can divide by 4.

4 STUDENT ACTIVITY

Children do the exercises.

Children colour in $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ of picture diagrams.

Display work and children make comments on each other's artwork.

Recite 2 and 4 times tables



1 OBJECTIVE

Fractions

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

2 STARTER

Sing a number song- a little, two little, three little Indians... and ten green bottles...

Recite

2 and 4 times tables.

Chant

Show all fingers, I say 10, Show 5 fingers I say half, Show all fingers, I say 10, Show 5 fingers, I say half, Show all fingers, I say mine! Show 5 fingers, I say fine.

Revise $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ of numbers between 4 to 100.

3 INTRODUCTION

Children count out 100 objects from treasure box to work with. Children work in pairs. Teacher asks the children to separate their piles of 10, 20, 30, 40, 50, 60, 70, 80, 90 and 100 objects into 2 equal piles, e.g.

$1 + 1 = 2$, $2 + 2 = 4$, $3 + 3 = 6$, $4 + 4 = 8$, $5 + 5 = 10$, $10 + 10 = 20$, $15 + 15 = 30$, $20 + 20 = 40$, $25 + 25 = 50$, $30 + 30 = 60$, ... $50 + 50 = 100$ etc. These numbers when divided into two/half piles always gives an equal number in each pile.

Teacher asks the children to separate their piles of 4, 8, 12, 16, 20, 24 ... 100 objects into 4 equal piles. Ask the children how many objects are in each pile e.g. $2 + 2 + 2 + 2 = 8$, $3 + 3 + 3 + 3 = 12$, $4 + 4 + 4 + 4 = 16$, $5 + 5 + 5 + 5 = 20$... $10 + 10 + 10 + 10 = 40$, $20 + 20 + 20 + 20 = 80$, and $25 + 25 + 25 + 25 = 100$.

4 TEACHER ACTIVITY

Teacher prepares worksheet for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, problems. For example

$\frac{1}{2}$ of 40 =	$\frac{1}{4}$ of 40 =	$\frac{3}{4}$ of 40 =
$\frac{1}{2}$ of 60 =	$\frac{1}{4}$ of 60 =	$\frac{3}{4}$ of 60 =
$\frac{1}{2}$ of 80 =	$\frac{1}{4}$ of 80 =	$\frac{3}{4}$ of 80 =
$\frac{1}{2}$ of 100 =	$\frac{1}{4}$ of 100 =	$\frac{3}{4}$ of 100 =

Teacher encourages children to use their pile of objects to work out the answers.

Teacher prepares worksheets with circles that show half and quarter fractions. In the ones that show half, draw equal number of things in each half. In circles that show quarters, draw an equal number of things in each quarter e.g. 5 birds in each one, so a full circle will show 20 birds altogether.

4 TEACHER AND STUDENT ACTIVITY

Children do the exercises.

Children colour in $\frac{1}{4}$, $\frac{1}{2}$, and $\frac{3}{4}$ of picture diagrams.

Display work and children make comments on each other's artwork.

Recite 2 and 4 times tables

5 CONCLUSION AND ASSESSMENT

Ask children to show $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ of numbers.



1 OBJECTIVE

Fractions

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

2 STARTER

Sing a number song- a little, two little, three little Indians... and ten green bottles...

Recite

2 and 4 times tables.

Chant

Show all fingers, I say 10, Show 5 fingers I say half, Show all fingers, I say 10, Show 5 fingers, I say half, Show all fingers, I say mine! Show 5 fingers, I say fine.

Revise $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ of numbers between 4 to 100.

3 INTRODUCTION

Teacher revises dividing a whole thing (pawpaw) or one group of things or people. Stress that when dividing by half an equal number of things/people must be in the two groups or pile. When dividing in quarters or 4s an equal number must be in each of the four piles or groups. Children count out 100 objects from treasure box to work with. Children work in pairs. Teacher asks the children to explore other numbers that can divide by 2 and 4.

4 TEACHER ACTIVITY

Teacher prepares worksheet for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, problems. For example

$\frac{1}{2}$ of 16 =	$\frac{1}{4}$ of 12 =	$\frac{3}{4}$ of 16 =
$\frac{1}{2}$ of 24 =	$\frac{1}{4}$ of 44 =	$\frac{3}{4}$ of 32 =
$\frac{1}{2}$ of 36 =	$\frac{1}{4}$ of 88 =	$\frac{3}{4}$ of 84 =
$\frac{1}{2}$ of 42 =	$\frac{1}{4}$ of 92 =	$\frac{3}{4}$ of 96 =

Teacher encourages children to use their pile of objects to work out the answers.

Teacher prepares worksheets with circles that show half and quarter fractions. In the ones that show half, draw an equal number of things in each half. In circles that show quarters, draw an equal number of things in each quarter e.g. 6 cars in each one, so a full circle will show 24 cars altogether.

4 STUDENT ACTIVITY

Children do the exercises.

Children colour in $\frac{1}{4}$, $\frac{1}{2}$, and $\frac{3}{4}$ of picture diagrams.

Display work and children make comments on each other's artwork.

Recite 2 and 4 times tables

5 CONCLUSION AND ASSESSMENT

Ask children to show $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ of numbers.



1 OBJECTIVE

Angles and Directions

2 STARTER

Song

'Five little ducks' or any songs about directions.

Game

Simple Simon says go to the door; turn right... turn left etc.

Snake and ladder

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Teacher asks for volunteers. Teacher gives to children directions to walk in certain direction, turning right or left etc.

4 TEACHER ACTIVITY

Teacher allows children to give each other directions and act them out.

Teacher prepares/finds worksheets shows going through a maze to get to a place/reach the top.

Teacher draw a map showing where the children sit in the class room

Teacher prepares a simple map of the school that show where the children's classroom is. Use various shapes to show the different school buildings. Make sufficient duplicates for all the children. Discuss with the children where their classroom is on the map.

Teachers read a story that illustrates directions e.g. Hazel and Gretel.

4 STUDENT ACTIVITY

Children give directions to friends and friends act them out. E.g. Go towards the front of the classroom. Turn right and walk towards the door. Look behind the door. There is a bin there. Bring the bin to me please.

Children trace with pencils the path that leads them out of the maze to place/top.

Children identify where they are in the map.

Children colour in the shape that represents their classroom on the map.

Children listen to the story and discuss the directions described in the story.



5 CONCLUSION AND ASSESSMENT

Give directions to children to walk a few steps in one direction and turn right or left.

1 OBJECTIVE

Angles and Directions

2 STARTER

Song

Three little ducks...

Game

Simple Simon says go to the door, turn right... turn left etc.

Snake and ladder

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Draw a right angle on the board. Show examples of things that have right angles in the classroom e.g. black board, floor, door etc

4 TEACHER ACTIVITY

Teacher prepares worksheets with dots for children to join dots to make right angles.

Teacher prepares/collects worksheets that have dotted pictures of houses, boats, cupboards etc.

Teacher asks children to bring small empty boxes to school and teacher also collects as many as possible. Teacher brings paint, roll of string and pairs of scissors.

Teachers read a story that describes some shapes



4 STUDENT ACTIVITY

Children join the dotted lines to form shapes that have right angles. Make small ones and big ones

Children join the lines to make the pictures and colour them in.

Children paint the boxes, dry them and display them.

Children make comments on each other's artwork and point out the right angles on their boxes.

Children listen to the story and discuss the shapes described in the story.



5 CONCLUSION AND ASSESSMENT

Show children shapes and they say what shapes are.

1 OBJECTIVE

Angles and Directions

2 STARTER

Song

Three little ducks...

Game

Simple Simon says go to the door, turn right... turn left etc.

Snake and ladder

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Show the children a children's story book. Discuss the shape of the book and the type of angles it has. (square, right angles)

4 TEACHER AND STUDENT ACTIVITY

Teacher reads the story to the children. Ask the children if anything in the story had shapes and angles

Teacher prepares/collects worksheets that have dotted pictures of houses, cupboards, garden, playing fields, animals, etc.

Teacher asks children to draw a picture of their homes and do a boarder around their pictures.

Teacher asks the children to explain the pictures they have drawn on their homes.

4 TEACHER AND STUDENT ACTIVITY

Children explain the shapes and angles they identified in the story.

Children join the lines to make the pictures and colour them in.

Children draw a picture of their homes and do a boarder around their pictures.

Children to explain the pictures they have drawn on their homes.

Display the pictures and children comment of each other's work.



5 CONCLUSION AND ASSESSMENT

Ask children to show examples of right angles of objects in the classroom.

1 OBJECTIVE

Angles and Directions

2 STARTER

Song

Three little ducks...

Game

Simple Simon says go to the door; turn right... turn left etc.

Snake and ladder

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Read a children's story about buildings. Ask children what shapes would they find in buildings (squares, circles, triangles)

4 TEACHER ACTIVITY

Teacher takes the children for a tour around the school and asks them to take note of the shapes that they saw and where they saw them. Children work in pairs.

Teacher prepares/collects worksheets that have dotted pictures of houses, cupboards, garden, playing fields etc.

Teacher asks children to draw a simple map of school and identify the buildings in the school.

Teacher asks the children to explain the school map they have drawn.



4 STUDENT ACTIVITY

Children walk in pairs with the teacher around the school and take note of the shapes that they saw and where they saw them. Children report on what they saw.

Children join the lines to make the pictures and colour them in.

Children draw a simple map of the school and identify the buildings in the school.

Children explain the school map they have drawn.

Display the pictures and children comment of each other's work.



5 CONCLUSION AND ASSESSMENT

Show the children the school map and ask them to name the buildings represented in the map.

1 OBJECTIVE

Angles and Directions

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

2 STARTER

Song

Three little ducks...

Game

Simple Simon says go to the door; turn right... turn left etc.

Snake and ladder

3 INTRODUCTION

Teacher revises shapes and right angles, reading of maps and giving directions.

4 TEACHER ACTIVITY

Teacher prepares/collects worksheets that have dotted pictures of houses, cupboards, garden, playing fields, animals, different forms of transport, flowers, people etc.

Teacher asks children to draw pictures of what saw during the school tour and do a broader around their picture.

Teacher asks the children to explain what they have drawn in their pictures.



4 STUDENT ACTIVITY

Children join the lines to make the pictures and colour them in.

Children draw pictures of what saw during the school tour and do a broader around their picture.

Children explain what they have drawn in their pictures.

Display the pictures and children comment of each other's work.



5 CONCLUSION AND ASSESSMENT

Show the children the school map and ask them to name the buildings represented in the map and what shapes are used in the map to represent the buildings.

1 OBJECTIVE

Symmetry

2 STARTER

Read a story that has mirrors in the story. E.g. 'Snowwhite and the seven dwarfs'.

Discuss what mirrors do (show reflection of people, dogs, items etc.). The images are flipped. Our reflection in mirrors looks backwards to us. Also when we hold a group of words or numbers to a mirror, they look backwards to us. They are the same letters and numbers, but flipped.

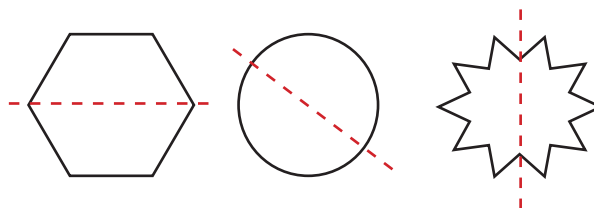
LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

The Line of Symmetry is the imaginary line where you could fold the image and have both halves match exactly. Discuss the pictures



4 TEACHER ACTIVITY

Teacher prepares/collects sufficient turn and flips pictures (hands, gloves, animals, flowers) sheets for the class. Talk about the pictures with the children.

Teacher prepares pictures like the samples given (from <http://www.mathsisfun.com/definitions/line-symmetry.html>) for children's artwork



4 STUDENT ACTIVITY

Children colour in the pictures and fold in half so they can see how both halves of the picture matches.



5 CONCLUSION AND ASSESSMENT

Ask the children to fold square shape papers in half in any direction. Ask them what they can see.

1 OBJECTIVE

Symmetry

2 STARTER

Story

Read a story about reflection in water. E.g. The Dog and the cuscus

Discuss reflections on calm water (it can show reflection of people, dogs, mountains etc.). People and animal reflections in the calm waters are seen/shown backwards/upside down to us. Like this picture.

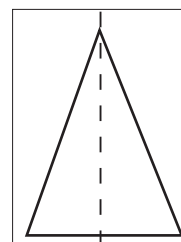
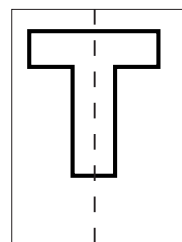
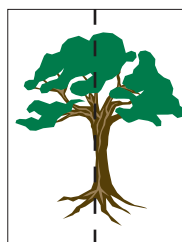
LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Discuss with children that when we fold shapes in half, the shape becomes exactly like the other. Show children how this is so.



4 TEACHER ACTIVITY

Teacher prepares/collects sufficient turn and flips pictures (hands, gloves, animals, flowers) sheets for the class. Talk about the pictures with the children.

Teacher prepares pictures like the samples given (from <http://www.mathsisfun.com/definitions/line-symmetry.html>) for children's artwork

4 STUDENT ACTIVITY

Children colour in the pictures and fold in half so they can see how both halves of the picture matches.



5 CONCLUSION AND ASSESSMENT

Ask the children to point out the line of symmetry.

1 OBJECTIVE

Symmetry

2 STARTER

Story

Children clap as they count 0 to 100 and backwards 100 to 0. They clap slowly the first time around and faster the second time around.

Ask the children to look in a bucket/dish of water. Tell them to explain what they see.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Show pieces of material with printed flower patterns or other objects patterns to the children. Ask the children what they see when the pieces of printed fabric are seen when the materials are held with the prints on the outside. Then ask what they see when the same pieces of fabric are turned inside out or the opposite way.

4 TEACHER AND STUDENT ACTIVITY

Teacher prepares/collects sufficient turn and flips pictures (hands, gloves, animals, flowers) sheets for the class. Talk about the pictures with the children. (The pairs of things in the picture are the same.)

Teacher brings printed fabric, cardboard boxes, glue and pairs of scissors. Teacher also asks the children to bring a piece of printed fabric, cardboard boxes, glue and pairs of scissors materials. Show children how to cut out exactly two patterns from their pieces of fabric and measure out two pieces of cardboard the same size for children to mount the patterns onto. One of the prints should be mounted the right way up and the other inside out.



4 TEACHER AND STUDENT ACTIVITY

Children colour in the pictures.

Children cut out two patterns from their fabrics. Measure and cut out their two pieces of cardboard to mount their patterns on. One of the prints should be mounted the right way up and the other inside out.

Display their artwork and comment on each other's work.



5 CONCLUSION AND ASSESSMENT

Show children pictures. Ask them to show you which pictures are symmetrical.

1 OBJECTIVE

Symmetry

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

2 STARTER

Children clap as they count 0 to 100 and backwards 100 to 0. They clap slowly the first time around and faster the second time around.

Ask children to talk about symmetry as they understand it.

3 INTRODUCTION

Show how patterns of letters or numbers are symmetrical: 1,2,3,4 is symmetrical to 4,3,2,1

abcd is symmetrical to dcba, circle, square, equilateral triangle is symmetrical to equilateral triangle, square, circle. Stress that in these the order is exactly "flipped".

4 TEACHER ACTIVITY

Teacher prepares sufficient worksheet that has exercise numbers that that are flipped for the class mixed with and those that are not flipped. E.g. a) 5, 6, 7, 8; 8, 7, 6, 5; b) 10, 11, 12, 13; 13, 12, 11, 10, c) 20, 21, 22, 23, 24, 25, 26, 27, 28; d) 10, 20, 30, 40; 40, 30, 20, 10.

Teacher prepares/collects sufficient materials for children's artwork on symmetry. E.g.



4 STUDENT ACTIVITY

Children cross out the numbers that are not symmetrical.

Children colour in the pictures. The two halves of the pictures must be identical like the two pictures. Children can draw their own if they already have the skills to do so.



5 CONCLUSION AND ASSESSMENT

Ask children to give two sets of numbers that are symmetrical to each other?

1 OBJECTIVE

Symmetry

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

2 STARTER

Song

Children sing the animals went in two by two
hurra, hurra...

3 INTRODUCTION

Discuss problems that are symmetrical to each other.

$4 + 3$ is symmetrical to $3 + 4$. We can flip elements in addition and they equal each other.

2×5 is symmetrical to 5×2 . We can flip elements in multiplication and they equal each other.

Stress that $5 - 2$ is NOT symmetrical to $2 - 5$. We cannot flip elements in subtraction or division.

4 TEACHER ACTIVITY

Teacher prepares sufficient worksheets that have problems that are symmetrical to each other. E.g

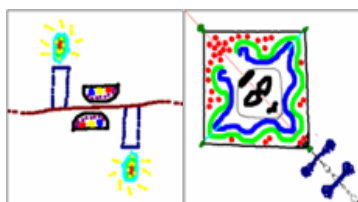
1 + 2 is symmetrical to 2 + 1.

b) $3 + 2$ is symmetrical to $2 + 3$ etc.

c) 3×5 is symmetrical to 5×3

d) 2×10 is symmetrical to 10×2

Ask children to add 5 more addition and 5 multiplication problems that are symmetrical.



Teacher prepares/collects sufficient materials for children's artwork on symmetry. E.g.



4 STUDENT ACTIVITY

Children add 5 addition and 5 multiplication problems that are symmetrical.

Children colour in the pictures. The two halves of the pictures must be identical like the two pictures. Children can draw their own if they already have the skills to do so.



5 CONCLUSION AND ASSESSMENT

Ask children to give two sets of problems that are symmetrical to each other?

1 OBJECTIVE

Recognise even number patterns on a 100 number square grid.

2 STARTER

Ask the children to count from 1 to 50 by following this instruction:

Clap, 2, clap, 4, clap, 6.

Continue to 50.

Ask the children to repeat the pattern 3 times, counting more quickly each time.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Put the children into a big circle.

Put 10 stones in front of them.

Tell them that you want to know if it is an even number.

Ask if anyone can tell you how to find out.

Put all of the stones into groups of 2. Ask if there are any stones left over.

If there are no stones left over, it is an even number.

Together, count the stones: 2, 4, 6, 8 and 10.

4 TEACHER AND STUDENT ACTIVITY

Bring 10 children to the front.

Put them into groups of 2. Ask if there are any children left over.

There are not, so 10 is an even number.

Together, count the children: 2, 4, 6, 8 and 10.

Tell the children that 2, 4, 6, 8 and 10 are even numbers.

Show them these numbers on a 1 to 100 number square.

Colour in the numbers then ask them what pattern the numbers make.

Ask them what will be the next 5 even numbers after 10 [12, 14, 16, 18 and 20].

Colour them in on the number square.

Repeat this for the rest of the 100 number square.

Put the children into pairs and give them 5 number cards.

Ask them to look at each number card and find that number on the 1 to 100 number square.

Ask if they can tell by looking at the pattern whether their number is even.

5 CONCLUSION AND ASSESSMENT

Point to a number on the number square.

Ask if the children can tell you if it is even and why they think this.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lessons.



1 OBJECTIVE

Recognise odd number patterns on a 100 number square grid.

2 STARTER

Ask the children to count from 1 to 50 by following this instruction:

1, buzz, 3, buzz, 5, buzz.

Continue this up to 50.

Ask the children to repeat the pattern 3 times, counting more quickly each time.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Show the children a 1 to 100 number square and ask them to count the even numbers.

Remind them of the pattern the even numbers make on the grid.

4 TEACHER AND STUDENT ACTIVITY

Bring 15 children to the front and put them into pairs.

Ask if 15 is an even number.

Show how it isn't even because there is 1 child left over.

Explain that we say that 15 is an 'odd' number.

Repeat this with 13 children.

Show 13 and 15 on the 1 to 100 number square.

Ask, 'What sort of number is before 13 and after 15?' Explain that it is an even number.

Show them that the pattern is odd, even, odd, even, odd, etc.

Give pairs of children a number card with an odd number on it.

Give them a pile of stones and ask them to count that number of stones.

Ask them to look at the number square and guess if their number is odd or even.

Put the stones into pairs to check.

Repeat using different numbers.

5 CONCLUSION AND ASSESSMENT

Point to a number on the number square.

Ask if the children can tell you if it is odd or even and if they can tell you why they think this.

Ask if they can tell you the difference between odd and even numbers.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lessons.



1 OBJECTIVE

Know that when 2 even numbers are added together, the answer will also be an even number.

2 STARTER

Play 'I say, you say'. The rule is 'plus 10'.

Point to yourself and say, 'I say 4,' and then point to the children and say, 'You say?'

The children will call out the answer, '14'.

Say 4 more numbers and then change the rule to 'plus 5'.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Ask the children to write down all the even numbers between 30 and 50.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Give one child 5 even numbers from 2 to 10 and give the other child one even number from 20 to 50.

Tell them that they must add their small numbers to the big number and write the number sentence in their books.

Repeat this until they have used all of their small numbers.

Ask 2 pairs to come together and show each other their number sentences.

Ask them to decide whether the answers are odd numbers, even numbers or both.

If they have done the additions correctly, all of the answers will be even.

5 CONCLUSION AND ASSESSMENT

Give each child an addition number grid to fill in as quickly as they can.

Check to see if they can tell you that all the answers are even numbers.

Remind them that when you add 2 even numbers together, the answer is always even.

+	2	4	6	8	10
2	4		8		12
4		8		12	
6	8		12	14	
8	10	12		16	
10		14		18	

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lessons.



1 OBJECTIVE

Know that when 2 odd numbers are added together, the answer will be an even number.

2 STARTER

Peg number cards from 0 to 50 on a washing line.

With the children, count the even numbers from 0 to 50 and the odd numbers backwards from

49 to 1.

Repeat this quietly then repeat it quickly.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Remind the children about yesterday's lesson.

Ask them what sort of number you get when you add 2 even numbers together [even].

Now ask them to think what will happen when they add 2 odd numbers.

Ask, 'Will the answer be odd or even?' and 'Why do you think this?'

4 TEACHER AND STUDENT ACTIVITY

Divide the class in to 2 groups.

Give each child in the first group a number card with an odd number between 1 and 25 written in red.

Give each child in the other group a number card with an odd number between 27 and 49 written in blue.

Tell them to find a person with a card of a different colour.

Tell them to add the 2 numbers together and write down the answer.

Repeat this activity with at least 6 other people.

Put a 1 to 100 number square on the board for those children who need help with their additions.

5 CONCLUSION AND ASSESSMENT

Bring the children together.

Ask them to look at their answers carefully.

Ask what they can tell you about these answers [they are all even].

Ask if this is what they guessed would happen at the beginning of the lesson.

Ask if they can explain why this happens.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lessons.



1 OBJECTIVE

Know that when an odd and even number are added together the answer will be an odd number.

2 STARTER

Play 'Simon Says'.

Give the children instructions, e.g. 'Simon says walk 2 steps', 'Simon says walk 2 steps back' and 'Walk 3 steps sideways'.

Those who do the action when Simon hasn't told them to are out.

LESSON TOPIC: Multiplication up 2 digit numbers

STRAND: Number and Operation

CONTENT STANDARD: 2.1.2

3 INTRODUCTION

Remind the children about yesterday's lesson.

Ask them what sort of number you get when you add 2 odd numbers [an even number].

Now ask them to think what will happen when they add an odd and an even number together.

Ask, 'Will the answer be odd or even?' and 'Why do you think this?'

4 TEACHER AND STUDENT ACTIVITY

Tell the children to copy this addition grid into their books and to write in all of the answers.

+	5	13	27	31
14				
26				
38				
40				

When they have finished it, tell them to swap with another person and check all of the answers.

Now ask them to look at the answers together. Ask, 'What can you tell me about the numbers? Are they odd or even?' [They are odd].

Show them why this is.

Write $6 + 3 = 9$

Draw pairs of crosses (x) to represent the numbers.

Show them that when you add an even and an odd number there is always an x left over, so the answer must be odd:

xx xx xx + xx x = xx xx xx xx x

Repeat this for other numbers.

5 CONCLUSION AND ASSESSMENT

Write sums such as $12 + 29 =$, $20 + 32 =$ and $31 + 17 =$

For each number sentence, ask whether the answers will be odd or even.

Work out the answers to check.

You might need a 1 to 100 number square to help the children find the answers.

Make a note of those who couldn't do this and those that found it too easy. Make assessment notes and put them in the class assessment folder.



1 OBJECTIVE

Identify numbers missing from a number line from 0 to 50.

2 STARTER

Put the children into 5 equal groups.

Give each group 0 to 50 flashcards that have been shuffled.

Ask them to put the cards into the right order as quickly as they can.

LESSON TOPIC: Addition, Subtraction and Multiplication problems

STRAND: Number and Operation

CONTENT STANDARD: 2.1.3

3 INTRODUCTION

Peg 0 to 50 flashcards onto a washing line.

Ask the children to count from 0 to 50 and back again.

Repeat, counting very quickly.

Tell them to shut their eyes, then take 5 flashcards off the line.

Ask the children which numbers have been removed.

Repeat this activity, taking away 5 different numbers.

5 CONCLUSION AND ASSESSMENT

Draw this number line on the board.

Ask the children if they can fill in the missing numbers.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lesson.

4 TEACHER AND STUDENT ACTIVITY

Put the children into 5 groups.

Give each group a set of 0 to 50 flashcards with 10 numbers missing.

Ask them to put their flashcards into the correct order then write the missing numbers in their books.

If they finish quickly, give them a different set of flashcards to work with.



1 OBJECTIVE

Identify numbers missing from a number line from 0 to 100.

2 STARTER

Show a number flashcard between 1 and 10.

Ask the children how many more you would need to make 10.

Then ask how many more you would need to make 20.

Show a different flashcard and repeat.

LESSON TOPIC: Addition, Subtraction and Multiplication problems

STRAND: Number and Operation

CONTENT STANDARD: 2.1.3

3 INTRODUCTION

Peg flashcards 50 to 100 onto a washing line.

Ask the children to count from 50 to 100 and back again.

Repeat, counting very quickly.

Tell them to shut their eyes and take 5 flashcards off the line.

Ask which numbers have been removed.

Repeat the activity, taking away 5 different numbers.

4 TEACHER AND STUDENT ACTIVITY

Put the children into 5 groups.

Give each group a set of 50 to 100 flashcards with 10 numbers missing.

Ask them to put their flashcards into the correct order and to write the missing numbers in their books.

If they finish quickly, give them a different set of flashcards to work with.

5 CONCLUSION AND ASSESSMENT

Peg 50 to 100 flashcards onto a washing line.

Together, count from 50 to 100, clapping hands and backwards from 100 to 50, stamping feet.

Ask the children to close their eyes.

Take away 1 flashcard.

Ask all of the children write the missing number in their books.

Repeat the activity, taking away different numbers.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lesson.



1 OBJECTIVE

Work out a missing number in a simple addition sum.

2 STARTER

Shuffle flashcards 0 to 25 and give one to 26 children in the classroom.

Ask the children to arrange themselves in order from 0 to 25.

Ask them to read out their numbers to check that the order is correct.

Repeat the activity with different children.

LESSON TOPIC: Addition, Subtraction and Multiplication problems

STRAND: Number and Operation

CONTENT STANDARD: 2.1.3

3 INTRODUCTION

Put 5 stones into a box.

Don't let the children see this.

Bring a child to the front of the class and give him or her 4 stones.

Show the children the box and tell them that all together you have 9 stones, including the ones you just gave away.

Ask if they can work out how many stones are in the box [5].

On the board write $4 + ? = 9$

If they can work it out, ask how they did it.

If they can't work it out tell them to start at 4 and use their fingers to count on to 9.

Repeat for different numbers up to 20.

4 TEACHER AND STUDENT ACTIVITY

Put children into pairs.

Give each child some stones. Tell them to count them.

Ask the pair to work out how many more stones the first child would need to make 15 stones and how many more the second child would need.

Tell them to write the number sentences in their books, e.g. $6 + ? = 15$ [$6 + 9 = 15$].

Tell them to put all of their stones together and work out how many more they would need to make 30.

Tell the children to write the number sentence in their books.

Repeat using different numbers of stones.

5 CONCLUSION AND ASSESSMENT

Tell the children a short number story, e.g. 'Altogether, Peter and John have 20 lollies. If Peter has 13 lollies, how many does John have?' [7].

Make a note of those who couldn't do this and those that found it too easy. Think about this



1 OBJECTIVE

Work out a missing number in simple subtraction problems.

2 STARTER

Sing a number song such as '10 green bottles standing on the wall' and '10 in the bed'.

LESSON TOPIC: Addition, Subtraction and Multiplication problems

STRAND: Number and Operation

CONTENT STANDARD: 2.1.3

3 INTRODUCTION

Take the children outside and put them in a line.

Ask them to take 5 steps forward.

Ask them to tell you how many steps they have taken.

Now ask them to take 3 steps back.

Ask how many more steps they would have to take to get back to where they started [2 steps].

Ask them to show the answer on their fingers, e.g. $5 - 3 = 2$. They will need to take 2 more steps to get back to where they started.

Repeat using different numbers.

4 TEACHER AND STUDENT ACTIVITY

Back in the classroom, read out some subtraction problems and ask the children to write the answers in their books, e.g. 'I had 6 balloons but now I have only 2 left. How many have I lost?' [4]

On the board write $6 - ? = 2$.

Remind the children how to count backwards from 6 to 2 using their fingers.

Tell a different story or tell the same story using different numbers.

5 CONCLUSION AND ASSESSMENT

On the board, write $12 - ? = 4$ and $? - 4 = 9$.

Ask the children to tell you the answers.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lesson.



1 OBJECTIVE

Work out a missing number in simple addition and subtraction problems.

2 STARTER

Play, 'I'm thinking of a number'.

Tell them it is between 0 and 20.

The children can ask questions such as 'is it odd or even' and 'is it more than 10 or less than 10?' to find the number.

Repeat the activity with different numbers between 0 and 20.

LESSON TOPIC: Addition, Subtraction and Multiplication problems

STRAND: Number and Operation

CONTENT STANDARD: 2.1.3

3 INTRODUCTION

Tell the children that you are thinking of a number.

Explain that your number is represented by the letter 'A'.

Give them 2 clues.

- When you add 3 to it, it makes 8.
- When you take it away from 9 you are left with 4.

On the board write $A + 3 = 8$. Ask what number the number is.

If they can't work it out tell them to start at 3 and use their fingers to count on to 8.

Write on the board $5 + 3 = 8$, so $A = 5$.

Check this with the other clue.

On the board write $9 - A = 4$. Check if $9 - 5 = 4$. As it does, $A = 5$.

Repeat this for different numbers.

5 CONCLUSION AND ASSESSMENT

Ask one child to read out their clues.

See if the rest of the class can guess the answer.

Ask if they can explain how they worked it out.

Repeat with another child.

Make a note of those who couldn't do this and those that found it too easy. Write notes about your assessment in the class assessment folder.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Give each child a number between 0 and 50.

Ask them to write 2 clues about their number.

One clue must be an addition clue and the other clue must be a subtraction clue.

They take it in turns to read out their clues and see if their partner can guess their number.



1 OBJECTIVE

Know the meaning of the word 'area'.

2 STARTER

Show the children 2D shapes such as circles, rectangles and triangles.

Ask how many lines of symmetry each one has.

LESSON TOPIC: Addition, Subtraction and Multiplication problems

STRAND: Number and Operation

CONTENT STANDARD: 2.1.3

3 INTRODUCTION

Ask the children to run their open hands on the top of their desks to feel the surface.

Tell them they were just feeling the surface of the top of their desk.

Explain that this is known as the 'area' of the top of your desk.

Explain that lots of times, people need to know certain areas like the area of their land so that they can keep it in their records. The school board of the school is also interested in knowing the total land area of the school.

4 TEACHER AND STUDENT ACTIVITY

Show the class the area of the board, that is all the surface of the board.

Indicate to the class the area of one of the walls of the classroom, or show how the area of a piece of paper is simply the surface of that paper.

Tell the children to note the area of the classroom door.

For this a child will go and run their open hands on the surface area of the door.

Explain that the entire surface surrounded by the door frame is called its area.

Next children will pick out a box in the classroom and pick out the area of the box aided by the teacher.

Ask the children to find things in the classroom which have an area bigger than their desks.

Then ask them to find things with a smaller area than their desks.

5 CONCLUSION AND ASSESSMENT

Ask the children to tell you about the areas of the things they have found in the classroom.

Check to make sure that they use the word 'area' correctly.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lesson.



1 OBJECTIVE

Measure and sort objects, such as leaves, from smallest area to biggest area.

2 STARTER

Describe different 2D shapes but don't let the children see them.

Ask if they can tell you the names of the shapes you are describing.

LESSON TOPIC: Addition, Subtraction and Multiplication problems

STRAND: Number and Operation

CONTENT STANDARD: 2.1.3

3 INTRODUCTION

Pick some flat objects from the classroom then rub your hand over the surface of the object and ask the children for the new word they learned to describe the surface of an object [area].

Pick 3 of the objects.

Ask the children to help you to decide which of your flat objects has the smallest surface or area and which has the biggest.

Put these in order from smallest to biggest

Take 3 different objects and repeat. This time put them in order from biggest to smallest.

4 TEACHER AND STUDENT ACTIVITY

Take the children outside to pick some leaves.

Put them into groups of 2 or 3.

Ask them to choose 3 of their leaves and to put them in order from smallest to biggest.

Ask them to draw these leaves.

Repeat with 3 different leaves.

5 CONCLUSION AND ASSESSMENT

Show the children 3 flat objects.

Ask them to tell you how they could feel the area of these objects.

Ask if they can put them in order from smallest to biggest.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lesson.



1 OBJECTIVE

Use non-standard units such as hand size to measure the 'area' of tables in the school.

2 STARTER

Put 2D shapes into a bilum.

Ask a child to feel one of the shapes in the bag and to describe it to the class.

Ask if the class can say the name of the 2D shape.

LESSON TOPIC: Addition, Subtraction and Multiplication problems

STRAND: Number and Operation

CONTENT STANDARD: 2.1.3

3 INTRODUCTION

Tell the children to open the palm of one hand and face it upwards towards their face.

Tell them that this is the 'area' of their hand.

Tell them that we can have some idea about an 'area' of something by estimation.

For example, we can estimate the area of the teacher's desk by how many open hands we can fit on top of the desk.

4 TEACHER AND STUDENT ACTIVITY

Show the children how to use their hands to estimate the area of a table top, A4 paper, and a section of the board (mark the area with chalk).

First, make a fist and count how many fists can fit in the area being looked at.

Next, open your hand and count how many hands can fit in the area,

Put the children into pairs to estimate the area of different table tops in the school.

First, they must count how many fists fit on the table top.

Next, they count how many open hands fit on the table top.

5 CONCLUSION AND ASSESSMENT

Ask the children to tell you which table in the school is the biggest and which is the smallest.

Ask some of them to show you how they counted the number of fists and how they counted the number of open hands.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lesson.



1 OBJECTIVE

Use non-standard units such as hand size to measure the 'area' of tables in the school.

2 STARTER

Ask the children to count from 1 to 100.

Tell them to say the odd numbers in a loud voice and the even numbers in a very quiet voice.

LESSON TOPIC: Addition, Subtraction and Multiplication problems

STRAND: Number and Operation

CONTENT STANDARD: 2.1.3

3 INTRODUCTION

Make a fist then look at your fist.

Ask the children to say the word 'fist'.

Tell them that we can use a fist as our 'area' measuring tool.

In this lesson they will use their fists to measure the 'area' of different books.

4 TEACHER AND STUDENT ACTIVITY

Show the children how to put your fist on the surface of a book and to count how many fists fit onto it. Show them how to draw a table to show their results.

Book	Number of fists
Book 1	10
Book 2	6
Book 3	15

Put the children into pairs and tell them to get 3 different books and measure their area by placing their fists on the surface of the books.

For each book, the children will write the area in terms of how many fists they were able to place on the surface of the book.

5 CONCLUSION AND ASSESSMENT

Draw a table for results on the board.

Ask one child to come up and count the number of fists that will fit on the surface of one of your books.

Ask another child to put write number in your table.

Repeat for other books. Look at the tables the children did in their pairs.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lesson.



1 OBJECTIVE

Estimate and compare the area of 5 different books and put them in order from biggest to smallest area.

2 STARTER

Play 'Simon Says,' e.g. 'Simon says jump 3 times', 'move forward 2 steps', 'turn to the right', 'move back 3 steps', 'turn to the left' and so on.

If any children do the action without the words 'Simon says', then they are out.

LESSON TOPIC: Addition, Subtraction and Multiplication problems

STRAND: Number and Operation

CONTENT STANDARD: 2.1.3

3 INTRODUCTION

Open the palm of your hand and turn it upwards towards your face.

Tell the children that in this lesson they will compare and measure the area of books using an open hand as the area measuring tool.

4 TEACHER AND STUDENT ACTIVITY

Show the children how to put your open hand on the surface of a book to count how many open hands fit onto it.

Tell them that if you can fit a lot of hands onto the book the area is big.

If you can only fit a few hands onto the book the area is small.

The bigger the number of hands the bigger the area of the book.

Show them how to draw a table to show their results.

Book	Number of open hands
Book 1	
Book 2	
Book 3	
Book 4	
Book 5	

Put the children into pairs and tell them to get 5 different books and measure their areas by placing open hands on the surface of the books.

Tell them to write their results in the table.

Ask the children to put the books in order from biggest to smallest area.

5 CONCLUSION AND ASSESSMENT

Show the children 5 different books.

Ask them to look at them and put them in order from the biggest to smallest.

Now ask the children to estimate the area of each book using their open hands and put them in order from biggest to smallest according to the number of hands.

Ask if this was the same order as when they just guessed.

Look at the tables the children did in their pairs.

Make a note of those who couldn't do this and those that found it too easy. Write this information in the class assessment folder.



1 OBJECTIVE

Recognise and name: cubes, cuboids, spheres, cones and cylinders.

2 STARTER

Play the game 'I Spy' using 2D shapes.

For example, one child should look around the classroom and say, 'I spy with my little eye something that is a square shape.'

The other children have to guess what the object is.

The child who guesses correctly must touch or point to the square shape.

If they are correct they have the next turn to 'Spy' another shape.

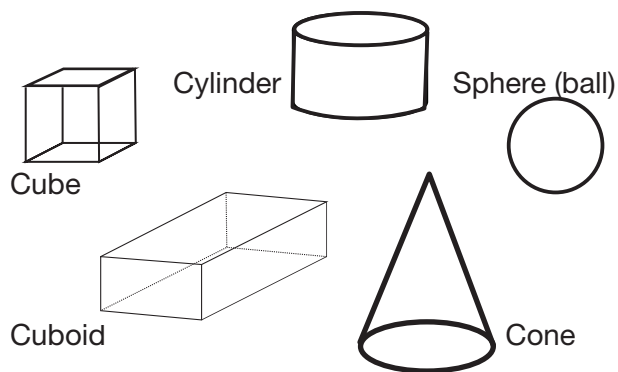
LESSON TOPIC: Addition, Subtraction and Multiplication problems

STRAND: Number and Operation

CONTENT STANDARD: 2.1.3

3 INTRODUCTION

Show the children solid shapes.



Ask the children to repeat the names as you say them.

4 TEACHER AND STUDENT ACTIVITY

Put the shapes in a bag and bring them out one at a time.

Ask the children to call out the names of the shapes.

Repeat this until they can say the names confidently.

Ask them to look around the classroom to see if they can find any of these solid shapes.

Play 'I Spy' again, but looking for the new shapes, e.g. 'I spy with my little eye something that is a sphere shape.'

5 CONCLUSION AND ASSESSMENT

Ask a child to pull a shape out of the bag and name it.

Check to see if the other children agree.

Ask the child to describe it in his or her own words.

Make a note of those who couldn't do this and those that found it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Use the words 'straight', 'face', 'corners', 'edges' and 'angles' to describe 3D shapes.

2 STARTER

Write 'heavy' and 'light' side by side on the board.

Collect some objects from the classroom, e.g. a leaf, a bottle top, a book, a chair, an empty tin, etc.

Ask the children to decide under which heading each item should be placed, based on their weight.

When all the objects have been sorted, ask which object they think is the heaviest and which is the lightest.

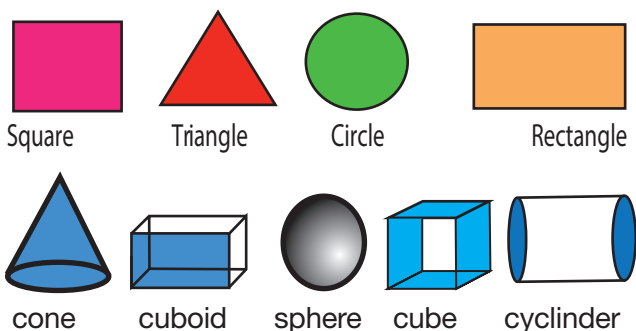
LESSON TOPIC: Addition, Subtraction and Multiplication problems

STRAND: Number and Operation

CONTENT STANDARD: 2.1.3

3 INTRODUCTION

Remind the children of all the 2D and 3D shapes they have learnt about.



4 TEACHER AND STUDENT ACTIVITY

Show the children a cube.

Tell them it has 6 faces, 12 edges and 8 corners.

Point to a face and tell them that a face is the flat part of a shape.

Point to an edge and tell them that this is where 2 faces meet.

Point to a corner and tell them that this is where 3 edges meet.

Ask them to say the words 'face', 'edge' and 'corner'.

Show them a sphere. Tell them it has one curved face, no edges and no corners.

Ask them to look around the classroom to see if they can find any of these solid shapes.

Put the children into small groups and give them 2 solid shapes.

Ask them to look at their shapes and describe them to each other, describing how many faces, how many corners and how many edges there are.

5 CONCLUSION AND ASSESSMENT

On the board draw a table. Ask the children to help you to fill it in.

Shape	Number of faces	Number of edges	Number of corners
Cube			
Cuboid			
Cylinder			
Sphere			
Cone			

Make a note of those who couldn't do this and those that found it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Describe the faces of 3D shapes using the words 'square', 'rectangle', 'triangle' and 'circle'.

2 STARTER

Put a set of 2D and 3D shapes in a line at the front of the class.

Ask the children to tell you the names of each of the shapes.

Tell them to close their eyes and remove one of the shapes. Ask them if they can tell you which shape is missing.

Replace the shape then repeat this game 3 or 4 times.

When they are good at it, remove 2 shapes at a time.

LESSON TOPIC: Addition, Subtraction and Multiplication problems

STRAND: Number and Operation

CONTENT STANDARD: 2.1.3

3 INTRODUCTION

Show the children a cube.

Ask a child to show you one of the faces.

Ask how many faces the cube has [6]. Ask the children to count them with you.

Ask what shape each face is [square].

Tell them that you want them to work in groups and do the same with different 3D shapes.

4 TEACHER AND STUDENT ACTIVITY

Draw this table on the board and ask them to copy it into their books.

Shape	Number of faces	Shape of each face
Cube		
Cuboid		
Cylinder		
Sphere		
Cone		

Put children into small groups then give them some 3D shapes.

Ask them to count the faces and to say the shape of the faces. Tell them to write this information into their tables.

You may need to remind them that the sphere has only 1 face and it is curved.

5 CONCLUSION AND ASSESSMENT

Ask each group to take it in turns to describe their shapes to the rest of the class.

Ask if they can say how many faces each shape has and if they can tell you the shape of each face.

Make a note of those who couldn't do this and those that found it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Explain how 2D and 3D shapes are the same and how they are different.

2 STARTER

Play the game 'Number Families' with the children.

Let the children watch while you write the following table on the board.

Family	Not family
5	6
13	10
7	12
25	34

Explain that the numbers in the left-hand column belong to a number family and the ones in the right-hand column do not.

Ask the children to suggest other numbers to write in the 'Family' column, which should be odd numbers, and the 'Not family' column which should be even numbers.

LESSON TOPIC: Addition, Subtraction and Multiplication problems

STRAND: Number and Operation

CONTENT STANDARD: 2.1.3

3 INTRODUCTION

Show the children a rectangle and a cuboid.

Ask them how they are the same and how they are different.

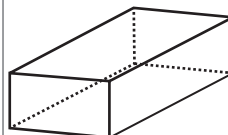
4 TEACHER AND STUDENT ACTIVITY

Together with the children, identify the properties of 2D and 3D shapes to explain how they are the same and how they are different.

Show them a rectangle and a cuboid. As you describe the shapes point to the parts you are describing.



It is a rectangle
It has 2 dimensions (2D) – length and width
It has 4 sides, 4 corners and 2 faces
It is a flat or plane shape



It is a cuboid
It has 3 dimensions (3D) – length, width and height
It has 12 edges, 8 corners and 6 faces
It is a solid shape
Its faces are rectangles

Write this information on the board.

Put the children into small groups and give them other 2D and 3D shape to compare.

5 CONCLUSION AND ASSESSMENT

Ask each group to take it in turns to describe their shapes to the rest of the class.

Ask if they can say how they are the same and how they are different.

Make a note of those who couldn't do this and those that found it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Listen to the description of a 3D shape and name it.

2 STARTER

Play a game, 'True or false?'

Read out a number sentence and ask the children to cross their arms if they think it is true and to put their hands on their heads if they think it is false.

For example: $55 + 4 = 69$ [False].

Ask them to explain their answer. Repeat with other number sentences.

LESSON TOPIC: Addition, Subtraction and Multiplication problems

STRAND: Number and Operation

CONTENT STANDARD: 2.1.3

3 INTRODUCTION

Show the children a 3D shape.

Together, decide on how many faces it has, how many edges, how many corners and the shape of the faces.

Do this for a cube, cuboid, sphere, cylinder and cone.

4 TEACHER AND STUDENT ACTIVITY

Put a 3D shape into a bag but don't let the children see it.

Ask one child to put his or her hand in the bag and describe the shape.

Check to see if he or she described it correctly.

Ask if the other children can guess the name of the shape.

Repeat this activity for different 3D shapes.



5 CONCLUSION AND ASSESSMENT

Put the 3D shapes in front of the class.

Start to describe one of the shapes.

See how quickly the children can point to the correct shape as you describe it.

Make a note of those who couldn't do this and those that found it too easy. Make assessment notes and put them in the class assessment folder.

1 OBJECTIVE

Recognise K2, K5, K10, K20, K50 and K100 banknotes and all coins.

2 STARTER

Count from 0 to 100 and back from 100 to 0 in twos, fives and tens.

LESSON TOPIC: Units of Volume

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.1

3 INTRODUCTION

Tell the children that the money that we hold in our hands when we go to buy things at the shop and at the market is PNG's currency.

Say out loud, 'Papua New Guinea's currency is called the kina!'

Explain that the notes are in kina and the coins are in toea. The coins available are for 10t, 20t, 50t and K1.

Discuss how everyone in PNG must respect the currency and you cannot just tear the notes up when we are angry or upset. Explain that you can be brought to court if you do.

In this lesson, explain that you will look at all the notes and coins that there are in the currency of our country, PNG.

4 TEACHER AND STUDENT ACTIVITY

Show the children the notes for K2, K5, K10, K20, K50 and K100.

Name the notes and point out main features of each.

Next show them the coins for K1, 50t, 20t, 10t and 5t. Name the coins and point out the main features.

Tell the children what each of these notes and coins can buy at the shops and market.

Show them how to write K2 and 50t on the board.

If the children find this easy, give them K2, K5 and K10 notes.

Give them K20, K50 and K100 notes. Ask them, 'How many K2 notes will make up a K10?' [5] and 'How many K5 notes will make up a K10?' [2].

Help those children who are having difficulty with this task.

5 CONCLUSION AND ASSESSMENT

Show the children all of the banknotes.

Ask, 'Can you name them?'

Show them all the coins.

Ask, 'Can you name them?', 'How many K10 make K50?' and 'How can we make K50 using K10 and K20 notes?'

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lesson.



1 OBJECTIVE

Exchange smaller banknotes for one bigger banknote, e.g. 5 K10 notes will make K50.

2 STARTER

Count from 0 to 100 and back from 100 to 0 in twos, fives and tens.

LESSON TOPIC: Units of Volume

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.1

3 INTRODUCTION

Say out loud, 'Kina! Kina! Kina! Toea! Toea! Toea! Are what I buy things with in the shops and market'.

Show the children the notes for K2, K5, K10, K20, K50 and K100.

Name the notes and point out the main features of each.

Show them the notes again. Ask if they can name them.

4 TEACHER AND STUDENT ACTIVITY

Remind the children that they know from arithmetic that smaller numbers can add up to make bigger numbers. Explain that this is true with money too and that smaller notes can add up to make bigger money notes.

Show how 5 K2 notes will make K10. Count the K2 together until you get K10.

Repeat, showing how many K10 will make K20 [2].

Show how many K10, K20 and K50 will make up K100.

You can use a 1 to 100 number square to help you to do this.

Ask the children to find the answers to the following problems:

1. How many K5 will make K20 [4]
2. How many K2 will make K20 [10]
3. How many K10 will make K20 [2]
4. How many K20 will make K100 [5]

Help those children who are having difficulty with this task.

5 CONCLUSION AND ASSESSMENT

Show the children all the banknotes.

Ask, 'Can you name them?', then ask for the answers again to the 4 questions from the last activity.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lesson.



1 OBJECTIVE

Place Value: Break and combine numbers

2 STARTER

Sing a number song- a little, two little, three little Indians... and ten green bottles...

Game: ten children are needed for this game. Start off with 1 child and say, Me, just 1 have 10 fingers, add another one and say, Me and 1 friend have 20 fingers, add another one and say Me and 2 friends have 30 fingers... Me and 3 friends have 40 fingers, Me and 4 friends have 50 fingers, Me and 5 friends have 60 fingers, Me and 6 friends have 70 fingers, Me and 7 friends have 80 fingers, Me and 8 friends have 90 fingers, Me and 9 friends have 100 fingers, 10 of us have 100 fingers!

4 TEACHER ACTIVITY

Teacher prepares additional combining and breaking numbers worksheets for students to explore various combinations of numbers that add up for a one number. E.g. $85 = 70 + 15$ and $70 + 15 = 85$. Also $85 = 60 + 25$, $60 + 25 = 85$. Also $85 = 40 + 45$, $40 + 45 = 85$ etc.

Ask children to refer to chart when breaking and combining given numbers. Remind children to check that the two numbers that are combined to make a number must add up e.g. $70 + 15 = 85$. Ask the children to work in pairs for this exercise. They can work on the combined numbers from prepared work sheets. Break up a given number into two numbers that add up the given numbers. E.g. $85 = 70 + 15$ and $70 + 15 = 85$. Also $85 = 60 + 25$ and $60 + 25 = 85$. Use objects from the treasure box for combining and breaking numbers.

Teacher prepares 3D shapes and pieces of strings for children to string together sets of 10s of 3D shapes to make patterns. E.g. 10 red, 5 blue, 10 yellow, 10 red, 5 blue, 10 yellow etc.

LESSON TOPIC: Units of Volume

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.1

3 INTRODUCTION

Do a mental test - break number and then combine them again using 25 e.g. a) $25 = 20 + x$ and $20 + x = 25$, b) $25 = 11 + xx$ and $11 + xx = 25$, c) $25 = 15 + xx$ and $15 + xx = 25$, d) $25 = 13 + xx$ and $13 + xx = 25$, e) $25 = 24 + x$ and $24 + x = 25$

4 STUDENT ACTIVITY

Children work in pairs to combine and break numbers using objects (bottle tops, stones) to strengthen this concept.

Children to string together sets of 10 3D of various colours to make patterns. E.g. 10 red, 10 blue, 10 yellow, 10 red, 10 blue ten yellow etc.

Display work and children make comments on each other's artwork.



5 CONCLUSION AND ASSESSMENT

Ask children to combine and break a given number. E.g. $85 = 70 + 15$ and $70 + 15 = 85$.



1 OBJECTIVE

Place Value: Break and combine numbers

LESSON TOPIC: Units of Volume

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.1

2 STARTER

Sing a number song- a little, two little, three little Indians... and ten green bottles...

Game: ten children are needed for this game. Start off with 1 child and say, Me, just 1 have 10 fingers, add another one and say, Me and 1 friend have 20 fingers, add another one and say Me and 2 friends have 30 fingers... Me and 3 friends have 40 fingers, Me and 4 friends have 50 fingers, Me and 5 friends have 60 fingers, Me and 6 friends have 70 fingers, Me and 7 friends have 80 fingers, Me and 8 friends have 90 fingers, Me and 9 friends have 100 fingers, 10 of us have 100 fingers!

3 INTRODUCTION

Do a mental test - break number and then combine them again using 30 e.g. a) $30 = 15 + xx$ and $15 + xx = 30$, b) $30 = 20 + xx$ and $20 + xx = 30$, c) $30 = 25 + x$ and $25 + x = 30$, d) $30 = 28 + x$ and $28 + x = 30$, e) $30 = 17 + xx$ and $17 + xx = 30$

4 TEACHER ACTIVITY

Teacher prepares combining and breaking numbers problem worksheets. E.g.

$$85 = 70 + xx \text{ and } 70 + xx = 85.$$

$$85 = 60 + xx \text{ and } 60 + xx = 85.$$

$$85 = 40 + xx \text{ and } 40 + xx = 85$$

$$85 = 20 + xx \text{ and } 20 + xx = 85$$

Remind children to check that the two numbers that are combined to make a number must add up e.g. $70 + 15 = 85$. Ask the children to work in pairs for this exercise. Encourage children to use objects from the treasure box for combining and breaking numbers.

Teacher prepares 3D shapes and pieces of strings for children to string together sets of 10s of 3D shapes to make patterns. E.g. 10 red, 5 blue, 10 yellow, 10 red, 5 blue, 10 yellow etc.

4 STUDENT ACTIVITY

Children work in pairs to combine and break numbers using objects (bottle tops, stones) to strengthen this concept.

Children to string together sets of 10 3D of various colours to make patterns. E.g. 10 red, 10 blue, 10 yellow, 10 red, 10 blue ten yellow etc.

Display work and children make comments on each other's artwork.



5 CONCLUSION AND ASSESSMENT

Ask children to combine and break a given number. E.g. $85 = 70 + 15$ and $70 + 15 = 85$.

1 OBJECTIVE

Show the different ways of making K2 in coins.

2 STARTER

Show the children a K2 banknote and all of the coins.

Put them into pairs and ask them how many different ways they can find to make K2 with their coins.

Give them 5 minutes to do this.

LESSON TOPIC: Units of Volume

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.1

3 INTRODUCTION

Ask the children to tell you all of the things that they can buy in their local shop.

Check to see if they know how much these things cost.

4 TEACHER AND STUDENT ACTIVITY

Set up a play shop in the classroom. You can use empty packets. On each packet write how much it costs.

Tell the children that they have K2 each to spend in the shop.

Let them take turns in being the shopkeeper and customers.

Let them practise paying for their shopping and giving change.

Help those children who are having difficulty with this task.



5 CONCLUSION AND ASSESSMENT

Ask the children to tell you how much they spent in the shop and ask what they bought with their money.

Ask if the shopkeeper gave them the correct change.

Make a note of those who couldn't do this and those that found it too easy. Put your assessment notes in the class assessment folder.

1 OBJECTIVE

Recognise K2, K5, K10, K20, K50 and K100 banknotes and all coins.

2 STARTER

Count from 0 to 100 and back from 100 to 0 in twos, fives and tens.

LESSON TOPIC: Units of Volume

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.1

5 CONCLUSION AND ASSESSMENT

Show the children all of the banknotes.

Ask, 'Can you name them?'

Show them all the coins.

Ask, 'Can you name them?', 'How many K10 make K50?' and 'How can we make K50 using K10 and K20 notes?'

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lesson.

3 INTRODUCTION

Tell the children that the money that we hold in our hands when we go to buy things at the shop and at the market is PNG's currency.

Say out loud, 'Papua New Guinea's currency is called the kina!'

Explain that the notes are in kina and the coins are in toea. The coins available are for 10t, 20t, 50t and K1.

Discuss how everyone in PNG must respect the currency and you cannot just tear the notes up when we are angry or upset. Explain that you can be brought to court if you do.

In this lesson, explain that you will look at all the notes and coins that there are in the currency of our country, PNG.

4 TEACHER AND STUDENT ACTIVITY

Show the children the notes for K2, K5, K10, K20, K50 and K100.

Name the notes and point out main features of each.

Next show them the coins for K1, 50t, 20t, 10t and 5t. Name the coins and point out the main features.

Tell the children what each of these notes and coins can buy at the shops and market.

Show them how to write K2 and 50t on the board.

If the children find this easy, give them K2, K5 and K10 notes.

Give them K20, K50 and K100 notes. Ask them, 'How many K2 notes will make up a K10?' [5] and 'How many K5 notes will make up a K10?' [2].

Help those children who are having difficulty with this task.



1 OBJECTIVE

Exchange smaller banknotes for one bigger banknote, e.g. 5 K10 notes will make K50.

2 STARTER

Count from 0 to 100 and back from 100 to 0 in twos, fives and tens.

LESSON TOPIC: Units of Volume

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.1

3 INTRODUCTION

Say out loud, 'Kina! Kina! Kina! Toea! Toea! Toea! Are what I buy things with in the shops and market'.

Show the children the notes for K2, K5, K10, K20, K50 and K100.

Name the notes and point out the main features of each.

Show them the notes again. Ask if they can name them.

4 TEACHER AND STUDENT ACTIVITY

Remind the children that they know from arithmetic that smaller numbers can add up to make bigger numbers. Explain that this is true with money too and that smaller notes can add up to make bigger money notes.

Show how 5 K2 notes will make K10. Count the K2 together until you get K10.

Repeat, showing how many K10 will make K20 [2].

Show how many K10, K20 and K50 will make up K100.

You can use a 1 to 100 number square to help you to do this.

Ask the children to find the answers to the following problems:

1. How many K5 will make K20 [4]
2. How many K2 will make K20 [10]
3. How many K10 will make K20 [2]
4. How many K20 will make K100 [5]

Help those children who are having difficulty with this task.

5 CONCLUSION AND ASSESSMENT

Show the children all the banknotes.

Ask, 'Can you name them?', then ask for the answers again to the 4 questions from the last activity.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lesson.



1 OBJECTIVE

Exchange 5t, 10t, 20t, 50t, and K1 coins for a K2 banknote.

2 STARTER

Show all of the banknotes and ask the children to say what they are.

Show all of the coins and ask the children to say what they are.

LESSON TOPIC: Units of Volume

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.1

3 INTRODUCTION

Tell the children that they must be careful when using money.

If they don't count it carefully then they can pay too much for their shopping.

They also need to count their change carefully. Today they are going to learn how to count coins.

4 TEACHER AND STUDENT ACTIVITY

Show the children a K2 note.

Ask them to work out the following.

1. How many K1 coins are worth the same as a K2 note.
2. How many 50t coins are worth the same as a K2 note.
3. How many 20t coins are worth the same as a K2 note.
4. How many 10t coins are worth the same as a K2 note.
5. How many 5t coins are worth the same as a K2 note.
6. Count the coins out with them for each task and check to see if they were correct when they finish.

Put the children into pairs then give them some coins. Ask them to find as many ways as they can to make K2 with their coins then write the answers in their books.

The children can use a 1 to 100 number square if they need help with counting their coins.

Help those children who are having difficulty with this task.

5 CONCLUSION AND ASSESSMENT

Show the children 1 50t coin, 1 20t coin and 1 K1 coin.

Ask them if this is worth the same as a K2 note.

Repeat this with different coins then ask them to show some of the ways they made K2 with their coins.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lesson.



1 OBJECTIVE

Show different ways of making K100 in bank notes.

2 STARTER

Use a 1 to 100 number square to add multiples of 10.

For example, $20 + 50 =$ and $10 + 20 + 20 =$

Remember that every time you add 10 you go down by one line on the number square.

LESSON TOPIC: Units of Volume

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.1

3 INTRODUCTION

Show the children all of the banknotes.

Point to the K100 banknote.

Tell them that there are lots of ways that smaller banknotes can be used to make K100.

4 TEACHER AND STUDENT ACTIVITY

Ask the children to work out the following:

1. How many K50 banknotes make K100.
2. How many K20 banknotes make K100.
3. How many K10 banknotes make K100.
4. How many K5 banknotes make K100.
5. How many K2 banknotes make K100.

Count the coins out with them for each task and check to see if they were correct when they finish.

Put the children into pairs and give them some banknotes.

Ask them to find as many ways as they can to make K100 with their banknotes and ask them to write the answers in their books.

The children can use a 1 to 100 number square if they need help with counting their coins.

Help those children who are having difficulty with this task.

5 CONCLUSION AND ASSESSMENT

Show the children one K50, one K20 and a K2.

Ask them if this is worth the same as a K100 banknote.

Repeat with different notes.

Ask them to show some of the ways they made K100 with their banknotes.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lesson.



1 OBJECTIVE

Show the different ways of making K2 in coins.

2 STARTER

Show the children a K2 banknote and all of the coins.

Put them into pairs and ask them how many different ways they can find to make K2 with their coins.

Give them 5 minutes to do this.

LESSON TOPIC: Units of Volume

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.1

3 INTRODUCTION

Ask the children to tell you all of the things that they can buy in their local shop.

Check to see if they know how much these things cost.

4 TEACHER AND STUDENT ACTIVITY

Set up a play shop in the classroom. You can use empty packets. On each packet write how much it costs.

Tell the children that they have K2 each to spend in the shop.

Let them take turns in being the shopkeeper and customers.

Let them practise paying for their shopping and giving change.

Help those children who are having difficulty with this task.

5 CONCLUSION AND ASSESSMENT

Ask the children to tell you how much they spent in the shop and ask what they bought with their money.

Ask if the shopkeeper gave them the correct change.

Make a note of those who couldn't do this and those that found it too easy. Put your assessment notes in the class assessment folder.



1 OBJECTIVE

Put fruit and vegetables in order, from the cheapest to the most expensive.

2 STARTER

Play, 'I say, you say'.

Explain that your rule is 'add 5'.

Start with, 'I say 5, you say...' The child you choose should answer with 10.

Repeat the activity, starting with 1.

LESSON TOPIC: Units of Volume

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.1

5 CONCLUSION AND ASSESSMENT

Ask the children to show you some of their work.

Check to see if they were correct. Ask if they could order fruit and vegetables from the cheapest to the most expensive.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lessons.

3 INTRODUCTION

Say out loud, 'Money can buy everything in the market and the shops.'

Tell children that we didn't used to have money and that people used to swap things, e.g. 'I'll give you 6 eggs if you give me some bananas.'

Explain how now most people use money to buy things.

4 TEACHER AND STUDENT ACTIVITY

Show the children a mango, a bundle of aupa, a middle sized cabbage and an apple.

Ask them how much they think each of these things would cost in the market then write the prices down.

Ask the children which costs the most. Tell them this is called 'the most expensive'.

Together say, 'expensive'.

Ask which costs the least. Tell them this is the called 'the cheapest'.

Together say, 'cheapest'.

Ask the children to put the fruit and vegetables in order from cheapest to most expensive.

Repeat this using different fruit and vegetables.

Ask the children to think of 4 different fruits then write how much they would cost in the market. Put them in order from the cheapest to the most expensive. Tell them to write the answer in their books.

Ask them to think of 4 different vegetables then write how much they would cost in the market. Put them in order from cheapest to most expensive. Tell them to write the answers in their books.

Help those children who are having difficulty with this task.



1 OBJECTIVE

Calculate the cost of 5 items if, for example, one item costs K2.

2 STARTER

Do repeated additions of 2 up to 20, e.g. $2 + 2 = 4$, $4 + 2 = 6$... $18 + 2 = 20$.

Do the same for additions of 3, 4 and 5.

3 INTRODUCTION

Say out loud, 'Money, money! Everything costs money!'

Tell the children that when they go shopping they need to add up the cost of their shopping.

Explain that today they are going to practise this.

LESSON TOPIC: Units of Volume

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.1

4 TEACHER AND STUDENT ACTIVITY

Tell them that you went to the shop to buy pawpaws.

Explain that 1 cost K2 but that you wanted to buy 3.

Ask them how you could work out how much these would cost.

Explain that they could use their 2 times tables, they could use repeat addition or they could use their fingers. Ask if they can tell you the cost [K6].

Ask them to help you solve other problems, e.g.:

- 1 orange at the supermarket costs K1. My friend went and bought 3. How much money did he spend? [K3]
- 1 bag of 10kg rice costs K30. How much money do I have to carry in my pocket to buy 3 10kg rice? [K90]

Give the children these problems to work out on their own:

- Mary wants to buy 5 biros and each biro cost K3. How much money will she pay altogether? [K15]
- Tom wants to buy 4 tins of fish. Each tin cost K4. How much will he pay altogether? [K16]
- A bag of lollies cost K3 each. How much will Kila spend if she buys 3 bags of lollies? [K9]

Help those children who are having difficulty with this task.

5 CONCLUSION AND ASSESSMENT

Ask the children to show you how they had worked out the answers to their problems.

Check to see if they were correct.

Ask if the children can work out the total cost of buying 3 t-shirts if 1 t-shirt costs K5? [K15].

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lessons.



1 OBJECTIVE

Calculate how many items in a shop can be bought with K10.

2 STARTER

On the board draw a number line from 1 to 100.

Use it to add up 3 numbers, e.g. $3 + 35 + 9 = [47]$

Remember to start counting with the biggest number, then add the smaller numbers on.

Repeat the activity with other numbers.

LESSON TOPIC: Units of Volume

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.1

3 INTRODUCTION

Tell the children that when you go to the market you take money with you and that when you buy things, you need to know that you have enough money in your pocket to buy what you need.

4 TEACHER AND STUDENT ACTIVITY

Show the children some things you can buy in the shop, e.g.

1. Klina soap, K1 each
2. Packet of rice, K4 each
3. Tinned fish, K3 each

Ask them, 'If you have K10, which of these things could you buy with your money?'

For example, they could buy:

1. 10 Klina soap
2. 2 packets of rice and 2 Klina soap
3. 1 packet of rice, 1 tin of fish and 3 Klina soap

On the board draw 10 things that you can buy in the shop, e.g. apples for 50t each, packets of biscuits for K9 each and packets of Twisties for K1.20 each.

Ask the children what they would buy if they had K10 to spend.

Tell them to draw these things in their books.

Help those children who are having difficulty with this task.

5 CONCLUSION AND ASSESSMENT

Ask them to show you their drawings of what they had bought.

Check to see if their calculations were correct.

Ask the more able children what they would buy if they had K20 to spend.

Make a note of those who couldn't solve these problems and those that found it too easy. Think about this when you plan tomorrow's lessons.



1 OBJECTIVE

Calculate how many items in a shop can be bought with K50.

2 STARTER

On the board draw a number line from 1 to 50.

Use it to add up 3 numbers, e.g. $7 + 25 + 8 = [40]$

Remind them to remember to start counting with the biggest number first.

Repeat the activity with other numbers.

LESSON TOPIC: Units of Volume

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.1

3 INTRODUCTION

Tell the children that clothes can cost a lot of money.

Ask them what clothes they would like to buy if they had money.

4 TEACHER AND STUDENT ACTIVITY

Show them real clothes or draw clothes on the board. Tell them the costs of everything. For example:

1. Shirts for K9 each
2. Blouses for K10 each
3. Shorts for K14 each
4. Skirts for K13 each
5. Shoes, K15 for a pair
6. Baseball caps for K9
7. Coats for K20

Put the children into pairs. Give them a 1 to 50 number line.

Tell them they have K50 to spend.

Ask them what they would buy with their money.

Tell them to draw these things in their books. Ask them to work out how much they spent.

Ask them how much change they would have from their K50.

Tell the children that they can use their number lines to find the answers.

Help those children who are having difficulty with this task.

5 CONCLUSION AND ASSESSMENT

Ask different pairs to show you their drawings of what they had bought.

Ask how much they had spent and how much change they had left.

Ask them if their calculations were correct.

Make a note of those who couldn't solve these problems and those that found it too easy. Think about this when you plan tomorrow's lessons.



1 OBJECTIVE

Solve simple word problems.

2 STARTER

Count around the class from 1 to 100 and back down to 1 again.

Tell the children to say the even numbers very quietly and odd numbers loudly.

LESSON TOPIC: Units of Volume

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.1

3 INTRODUCTION

Tell the children that sometimes it is easy to know what sums you have to do and that other times there are words and sentences you have to understand before you can solve the problems.

Explain that we call these 'word problems' and that today they will solve simple word problems.

4 TEACHER AND STUDENT ACTIVITY

Tell them a simple number story, e.g. 'Mary spent K9 in the shop and K13 in the market. How much did she spend altogether?' [K22]

Tell the children to think of the numbers, 'K9' and 'K13'.

If they want to know how much Mary spent, ask if they would need to add these numbers or subtract them [add]. Work out the answer together.

Tell another story, e.g. 'Tom had K40. He spent K29 on clothes. How much did he have left?'

Tell the children to think of the numbers, 'K40' and 'K29'. Ask if they would add or subtract to know how much he has left [subtract].

Use a number line to work out the answer together.

Tell 2 more stories for the children to work out on their own. Tell them to write the answers in their books.

Help those children who are having difficulty with this task.

5 CONCLUSION AND ASSESSMENT

Ask the children to tell you how they had worked out the answers to your number stories.

Check to see if they were correct.

Make up a new number story. Ask, 'Who can find the answer?'

Make a note of those who couldn't solve these problems and those that found it too easy. Write notes in the class assessment folder.



1 OBJECTIVE

Learn the 5 times multiplication table

2 STARTER

With the children say the 2 times table together.

Shuffle the 2 times table flashcards.

Show one of the cards and ask children to write down the answer. Check to see if it was correct.

Repeat with the other flashcards.

Repeat with flashcards for the 10 times table.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

5 CONCLUSION AND ASSESSMENT

Shuffle the 5 times table flashcards and show them one at a time.

3 INTRODUCTION

Tell the children that they are going to learn the 5 times multiplication table.

Count from 5 to 50 in fives. Point to the numbers on a number square as you count.

Bring 5 children to the front of the class.

Ask the first child to show the number of fingers on 1 hand.

Count them together, saying, '1, 2, 3, 4, 5. 1 lot of 5 is 5'.

Ask the child to show his or her other hand and say, '2 lots of 5 are 10'.

Ask the second child to show the fingers on one hand and say, '3 lots of 5 are 15' and then '4 lots of 5 are 20'.

Continue using the other 3 children up to '10 lots of 5 are 50'.

Tell the class another way to say 'lots of' is 'times'.

On the board write $1 \times 5 =$ and ask for the answer [5].

Write the answer in and say, '1 times 5 is 5'.

Repeat for all the numbers up to $10 \times 5 = 50$.

Show them that all the answers end in 5 or 0.

4 TEACHER AND STUDENT ACTIVITY

Tell the children to copy the 5 times table into their books.

In pairs, ask the children to say the times table together and then ask each other 5 times table questions.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.



1 OBJECTIVE

Use a number line to solve addition problems from 0 to 50.

2 STARTER

Together with the children, say the 2 times table, the 5 times table and the 10 times table.

Shuffle the times table flashcards and show one of them.

Ask the children to write down the answer to the sum.

Check it is correct.

Repeat with other flashcards.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Draw a number line from 0 to 50 on the board.

Write $5 + 4 + 20 =$

Tell the children that you are going to use the number line to find the answer. Show them the number line and the frog.

Ask them which is the best number to start with. Explain that you could start with 5, hop along 4 and then hop along 20 but that is a lot of hopping. Starting with the biggest number is easier.

Write $20 + 5 + 4 =$

Put the frog on 20 on the number line and count on 5, then count on another 4.

The number the frog lands on is the answer. Write the answer on the board [29].

Repeat with $2 + 40 + 7 =$ [49].

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Give them a 1 to 50 number line.

Write 10 addition sums on the board, e.g. $2 + 6 + 30 =$

Tell the children to use their number line to find the answer.

Remind them to start with the biggest number and to count on.

Tell them the number they land on is the answer and to write their number sentences in their books.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their additions and explain how they did it.

Check to see if the class agrees.

Repeat with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Use a number line to solve addition problems from 0 to 100.

2 STARTER

Count around the class in twos from 0 to 50 and backwards from 50 to 0.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Draw a number line from 0 to 100 on the board.

Write $30 + 24 + 5 =$

Show the children the number line and the frog.

Tell them that when you are adding big numbers on a number line you can hop along in tens.

Start on 30. Hop along 10 in one big hop and then another 10 in a big hop. Then hop along 4 and then 5. The number the frog lands on is the answer [59].

Repeat with $40 + 31 + 7 =$

4 TEACHER AND STUDENT ACTIVITY

Write 10 addition sums on the board.

Put children into pairs.

Give them a 1 to 100 number line.

Tell them to use it to find the answers.

Remind them to start with the biggest number and to count on.

Tell them the number they land on is the answer. Write their number sentences in their books.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their additions and explain how they did it.

Check to see if the class agrees.

Repeat with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Use mental arithmetic to solve addition problems from 0 to 50.

2 STARTER

Shuffle the number flashcards from 1 to 20.

Show a card.

Ask the children to double it.

If it is an even number ask them to halve it.

Repeat.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Show the children 3 number flashcards: 4, 3 and 4.

Ask, 'What's the best way to add these together?'

There are 2 fours so ask, 'What is double 4?' [8]

Remember 8 and count on 3 using fingers.

Write $4 + 4 + 3 = 11$

This is the order we used.

Put the flashcards back and take out another 3 cards, e.g. 2, 3 and 9.

There's no double this time.

4 TEACHER AND STUDENT ACTIVITY

Write 5 additions on the board that include the same numbers twice, e.g. $3 + 3 + 5 =$, and 5 additions where all the numbers are different.

Put the children into pairs.

Tell them to solve the problems using doubles where they can or by putting the biggest number first where there are no doubles.

Tell them to write the number sentences in their books.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their additions and explain how they did it.

Check to see if the class agrees.

Repeat with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Use a number line to solve addition problems from 0 to 100.

2 STARTER

Peg number flashcards from 0 to 30 on a line.

Count on from 0 to 30 and backwards from 30 to 1.

Tell the children to shut their eyes then remove 3 cards.

Ask if they can tell you which cards have been removed.

Repeat the activity with different cards.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Draw a number line between 1 and 100 on the board.

Write $3 + 20 + 40 =$

Tell the children that you are going to use the number line and the frog to find the answer.

Tell them to start with the biggest number: 40. Put the frog on 40.

Add 20 by taking one big leap of 10 and another big leap of 10 [$40 + 20 = 60$].

Count on by 3 more.

Explain how the number the frog lands on is the answer [$60 + 3 = 63$].

Repeat with $2 + 10 + 60 = [72]$.

4 TEACHER AND STUDENT ACTIVITY

Write 10 addition sums on the board, e.g. $3 + 10 + 50 = [53]$.

Put the children into pairs. Give them a number line.

Tell them to use their number line to find the answer, then start with the biggest number and count on.

The number they land on is the answer.

Tell them to write their number sentences in their books.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their additions and explain how they did it.

Check to see if the class agrees.

Repeat with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Record this information in the class assessment folder.



1 OBJECTIVE

Estimate and measure objects that are about 1 metre long or high.

2 STARTER

Practice the 2, 5 and 10 times tables.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Show the children a stick or a piece of rope that measures 1 metre.

Tell them that today you are going to look for things that are about 1 metre high or 1 metre long.

Tell them that learning to estimate how long or how high something is will give them a good idea of the measurement.

Doing this will help them to avoid mistakes when they do measurements.

4 TEACHER AND STUDENT ACTIVITY

Look at your classroom board.

Ask, 'How high is it? Could it be 1 metre high?'

Measure it to check.

Look at the length of a desk. Ask the children if they think it is about 1 metre long, whether it is shorter than 1 metre or longer than 1 metre.

Measure it to find out.

Look at the height of the classroom door. Ask the children if they think it is about 1 metre high, whether it is shorter than 1 meter or higher than 1 metre.

Measure it to find out.

Give the children lengths of string that are 1 metre long.

Ask them to look for 5 objects in the classroom that they estimate are about 1 metre long or 1 metre high.

Tell them to write the names of these objects in their books. Measure the objects and ask if their estimates were correct.

Help those children who are having difficulty with this task.

5 CONCLUSION AND ASSESSMENT

Point at different things in the classroom.

Check to see if the children can estimate whether they are about 1 metre, more than 1 meter or less than 1 metre.

Make a note of those who couldn't do these measurements and those that found it too easy. Make a note of this when you plan tomorrow's lesson.



1 OBJECTIVE

Find 2 objects which together measure $\frac{1}{4}$ metre, $\frac{1}{2}$ metre, 1 metre.

2 STARTER

Show children a number flashcard between 1 and 20.

Ask, 'How many more would make 20?'

Repeat with other flashcards.

3 INTRODUCTION

Tell the children that in life we measure to find out high or long something is.

We use metres as our standard.

Show them a string that is 1 metre long.

Now show them some strings that are $\frac{1}{2}$ metre and $\frac{1}{4}$ metre long.

Tell them that today they will use these strings to measure the length or height of 2 objects.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

4 TEACHER AND STUDENT ACTIVITY

Show the children the 1 metre string.

Pick 2 things in the classroom that together measure 1 metre.

Put them next to each other and measure them with the string.

Show the children the $\frac{1}{2}$ metre string.

Tell them that 2 of these strings are the same as a 1 metre string.

Pick 2 things in the classroom that together measure $\frac{1}{2}$ metre.

Put them next to each other and measure them with the string.

Show the children the $\frac{1}{4}$ metre string.

Tell them that 4 of these strings are the same as a 1 metre string.

Pick 2 things in the classroom that together measure $\frac{1}{4}$ metre.

Put them next to each other and measure them with the string.

Give the children $\frac{1}{4}$ metre, $\frac{1}{2}$ metre and 1 metre strings.

Tell them to look around the classroom or the playground and find 2 objects that will together measure $\frac{1}{4}$ metre, $\frac{1}{2}$ metre and 1 metre.

Tell the children to write their answers in their books.

Help those children who are having difficulty with this task.

5 CONCLUSION AND ASSESSMENT

Ask the children to tell you 2 things that together measure $\frac{1}{4}$ metre and to show how they measured them. Repeat for $\frac{1}{2}$ metre and 1 metre.

Make a note of those who couldn't do these measurements and those that found it too easy. Remember this when you plan tomorrow's lesson.



1 OBJECTIVE

Measure height and arm spans using a 1 metre ruler and find the relationship between the 2.

2 STARTER

Show the $\frac{1}{4}$ metre string.

Ask how many of these are the same as the 1 metre string [4].

Show the $\frac{1}{2}$ metre string.

Ask how many of these are the same as the 1 metre string [2].

Point at different objects in the classroom.

Ask if they are more than 1 metre or less than 1 metre.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Show the children your arm span.

Tell them that in traditional villages in Papua New Guinea, where rulers are not available, an arm span is used to measure things.

Use 1 metre, $\frac{1}{2}$ metre and $\frac{1}{4}$ metre strings to measure your arm span.

4 TEACHER AND STUDENT ACTIVITY

Measure the length of the board using arm spans.

Estimate the width of the door in arm spans.

Measure it to see if you were correct.

Repeat with other things in the classroom.

Measure the arm span of 1 of the children. Ask if it's the same as the teacher's.

Ask, 'How many of the child's arm spans does the board measure?'

Measure other things in the class in children's arm spans.

Now measure the arm span of one of the children.

Measure the height of the child. Ask if they are the same.

Repeat for other children in the class.

5 CONCLUSION AND ASSESSMENT

Measure the arm span and height of a child and show how they are the same.

Ask, 'Do all children have the same arm span?' and 'Do adults and children have the same arm span?'

Explain that they are different and this is why we measure things in metres.

Ask if the children can show you how they used their arm spans to measure things in the class room.

Make a note of those who couldn't do these measurements and those that found it too easy.



1 OBJECTIVE

Measure around a tree trunk.

2 STARTER

Pick 5 children.

Ask the class to put them in order from shortest to tallest.

Pick 5 different children.

Ask the class to put them in order from tallest to shortest.

Ask, 'Who is the tallest in the class?'

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

5 CONCLUSION AND ASSESSMENT

Ask the children which tree in the playground has the biggest trunk and which is the smallest.

Ask if they can look at the trees and tell you which is the tallest.

Make a note of those who couldn't do these measurements and those that found it too easy. Remember this when you plan tomorrow's lesson.

3 INTRODUCTION

Tell the children that in this lesson, they are going to measure a tree trunk.

Explain that since the measurement around the tree is not straight, they will need to measure it with a rope.

They will then stretch out the rope on the 1 metre ruler to find the tree trunk measurement.

4 TEACHER AND STUDENT ACTIVITY

Look for a fallen tree or a tree standing in the school ground.

Show the children how to put a string around the tree trunk and make a mark on the string. Then stretch out the rope. Ask if it is more than 1 metre or less than 1 metre.

Measure it to check on a 1 metre ruler.

Ask the children to measure the trunk of different trees using a string.

After making a mark on the string they need to stretch it out and estimate if it is more than 1 metre or less than 1 metre.

Measure the string on the 1 metre ruler to find out the measurement of the tree trunk.

Tell the children to write the answers in their books.

Find a big tree and repeat.

Give help to children having difficulty with this.



1 OBJECTIVE

Tell how the length of their shadow changes during the day.

2 STARTER

Show the children a clock.

Put the hands to 8 o'clock.

Ask what they do at this time.

Repeat for other times.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Tell the children that today they will measure their shadows at different times during the day to see if it changes length.

4 TEACHER AND STUDENT ACTIVITY

Take the children outside.

Choose 1 child to stand in the middle of the playground.

Draw around his or her feet and draw around their shadow.

Use a long string to measure the length of the shadow.

Cut the string to this length.

Do this every hour through the day.

Use the same child each time.

Make him or her stand in the same place each time.



5 CONCLUSION AND ASSESSMENT

Show the strings in the order that they were measured.

Ask if the children can tell you what happens to the length of the shadow during the day.

Make a note of those who couldn't tell you that the shadow got shorter up to noon and then longer. Write these notes in the class assessment folder.

1 OBJECTIVE

Estimate and solve subtraction problems from 0 to 100 with no renaming.

2 STARTER

Count up to 100 and backwards again in ones, then twos, then fives, and then tens.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Write on the board $9 - 7 =$

Ask the children the answer to the first question [2]. Ask how they worked it out.

Write $29 - 7 =$ and $49 - 7 =$

Ask if they can estimate the answers.

Ask how remembering ' $9 - 7 = 2$ ' will help them to work these out.

Explain that knowing number factors of 10 will help them to work out bigger problems.

Write $29 - 7 = 22$ and $49 - 7 = 42$

Ask if the children can see the pattern.

Ask them to tell you the answer to $69 - 2 =$ [67]

Repeat with another set of numbers.

4 TEACHER AND STUDENT ACTIVITY

Write 10 subtraction problems on the board, e.g. $89 - 4 =$ [85]

Put the children into pairs.

Tell them to work out the answers by thinking of the number factors of 1.

Tell them to estimate the answer and write the number sentence in their books.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their subtractions and to say how they did it.

Check to see if the class agrees with their answer and the way they did it.

Repeat with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Use a number line to solve subtraction problems from 0 to 50.

2 STARTER

Write the number 54 on the board.

Ask the children to tell you the number that is 1 more and the number that is 1 less than 54.

Repeat with other numbers between 50 and 100.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Draw a 1 to 50 number line on the board.

Write $40 - 5 =$

Tell the children they will use this number line to find the answer.

Ask if they will count forwards or backwards to find the answer.

Put a frog on 40 and count backwards by 5.

Write $40 - 5 = 35$

Write $45 - 13 =$

Remind them that 13 is the same as $10 + 3$.

Start at 45 and make one big hop of 10 to 35 and then hop back by another 3.

Write $45 - 13 = 32$

Repeat for $46 - 14 = [32]$.

4 TEACHER AND STUDENT ACTIVITY

Write 10 subtraction problems on the board.

Put the children into pairs.

Tell them to work out the answers using their number lines and to write the number sentences in their books.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their subtractions and to say how they did it.

Check to see if the class agrees with their answer and the way they did it.

Repeat this activity with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Use a number line to solve subtraction problems from 0 to 100.

2 STARTER

Play 'I'm thinking of a number'.

Say, 'My number is between 50 and 60'. The children should ask 'more than' and 'less than' questions to find the number.

Repeat with other numbers, e.g. 'My number is between 60 and 80'.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Draw a 1 to 100 number line on the board.

Write $70 - 7 =$

Tell the children they will use the number line to find the answer.

Ask if they will need to count forwards or count backwards to find the answer.

Put the frog on 70 and count backwards by 7.

The number frog lands on is the answer.

Write $70 - 7 = 63$

Write $67 - 16 =$

Remind them that 16 is the same as $10 + 6$.

Start at 67 and make one big hop of 10 to 57 and then hop backwards by another 6.

$67 - 16 = 51$

Repeat for $86 - 12 = [74]$.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their subtractions and to say how they did it.

Check to see if the class agrees with their answer and the way they did it.

Repeat this activity with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.

4 TEACHER AND STUDENT ACTIVITY

Write 10 subtraction problems on the board.

Put the children into pairs. Tell them to work out the answers using their number lines. Write the number sentences in their books.

Move around the class assessing the children by listening to them. Give help where needed. If some children are finding it too easy give them more difficult problems.



1 OBJECTIVE

Use a number line to solve problems from 0 to 50.

2 STARTER

Show the children a number between 1 and 20.

Ask them to double it.

If it is an even number halve it.

Repeat with other numbers from 1 to 20.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Draw a 1 to 50 number line on the board.

Tell a story, e.g. 'The farmer had 4 pigs, 12 chickens and 6 goats. How many animals did he have altogether?' [22].

Ask if you will need to add or subtract, count on or count backwards.

Remind them to start with the biggest number.

Put the frog on 12. Count on by 6 and then by another 4.

Explain that the number the frog lands on is the answer.

Write $12 + 6 + 4 = 22$

Tell a subtraction story, e.g. 'There were 40 children sitting in the classroom. 10 went out to play. 2 went home sick. How many children were left in the classroom?' [28]

Ask if you will need to add or subtract, count on or count backwards.

Put the frog on 40. Make one big leap of 10 back and then another 2.

The number frog lands on is the answer.

Write $40 - 10 - 2 = 28$

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their subtractions and to say how they did it.

Check to see if the class agrees with their answer and the way they did it.

Repeat this activity with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs. Tell them to make up number stories and find the answers.

Tell them to write the number sentences in their books.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.



1 OBJECTIVE

Use a number line to solve problems from 0 to 100.

2 STARTER

Say the 2 times table together, then the 5 times table then the 10 times table.

Shuffle the times table flashcards.

Show a flashcard and ask the children to write the answer.

Check to see if they were correct.

Repeat the activity with different flashcards.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

On the board write $6 + 52 =$

Ask the children to estimate the answer and to work it out using mental arithmetic.

Ask one child to explain how she did it.

Ask another child how he did it.

Check to see if they were the same.

Draw a 0 to 100 number line on the board.

Ask a child to check the answer by using the number line.

Write $59 - 7 =$

Ask the children to work it out using mental arithmetic.

Ask one child to explain how she did it.

Ask another child how he did it. Check to see if they were the same.

Ask a child to check the answer by using the number line.

Repeat for one more addition and one more subtraction problem.

5 CONCLUSION AND ASSESSMENT

Take one of the addition problems on the board.

Ask one child to say their estimate.

Ask another to say their answer.

Ask another to show you how they checked using the number line.

Repeat this with a different problem.

Make a note of those children not able to solve the problems and those finding it too easy. Write this information in the class assessment folder.

4 TEACHER AND STUDENT ACTIVITY

Write 5 addition and 5 subtraction problems up to 100 on the board.

Tell the children to estimate the answers and work it out using mental arithmetic.

Tell them to use their number lines to check the answers.

Write the number sentences in their books.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.



1 OBJECTIVE

Estimate, weigh and record how many $\frac{1}{4}$ kilogram bags of rice weigh 1 kilogram.

2 STARTER

Think of 10 things that are very heavy and 10 things that are very light.

Ask the children, 'What is the heaviest thing you can think of?' and 'What is the lightest?'

3 INTRODUCTION

Tell the children that when people weigh things they measure them in kilograms (kg).

Tell them that in this lesson they will estimate how many $\frac{1}{4}$ kg bags will weigh 1kg.

Explain that they will use a beam balance to check their estimate.

5 CONCLUSION AND ASSESSMENT

Ask if the children can explain how to use a beam balance.

Ask if they can tell you how many $\frac{1}{2}$ kg bags weigh the same as 1kg.

Ask if they can tell you how many $\frac{1}{4}$ kg bags weigh the same as 1kg.

Make a note of those children who do not understand how to use the beam balance. Use this information when you plan tomorrow's lesson.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

4 TEACHER AND STUDENT ACTIVITY

Show a picture a 10kg bag of rice.

Tell the children that this big bag of rice will weigh the same as 10 different 1kg bags.

Let them feel the weight of a 1kg bag.

Show them how to use a beam balance to find things that weigh the same.

Put a 1kg bag of rice on each side of the scale and show that they balance.

Explain that they are the same weight.

Ask the children to draw a picture of the bags on the beam balance in their books.

Let them feel the weight of a $\frac{1}{2}$ kg bag. Ask, 'Is it heavier or lighter than a 1kg bag?'

Put a $\frac{1}{2}$ kg bag of rice on one side and ask what you will need to put on the other side to balance it. [Another $\frac{1}{2}$ kg bag of rice].

Show that they balance.

Ask them to draw a picture of the bags on the beam balance in their books.

Let them feel the weight of a $\frac{1}{4}$ kg bag. Ask, 'Is it heavier or lighter than a $\frac{1}{2}$ kg bag?'

Ask how many $\frac{1}{4}$ kg bags of rice will weigh the same as a $\frac{1}{2}$ kg bag [2].

Check their answer using the beam balance.

Ask them to draw a picture of the bags on the beam balance in their books.

Now ask them how many $\frac{1}{4}$ kg bags of rice will weigh the same as a 1kg bag [4].

Check their answers using the beam balance.

Ask them to draw a picture of the bags on the beam balance in their books.



1 OBJECTIVE

Estimate, weigh and record how many $\frac{1}{2}$ kg bags of rice weigh the same as a 2kg bag of rice.

2 STARTER

Show the children $\frac{1}{4}$ kg, $\frac{1}{2}$ kg, 1 kg and 2kg bags of rice.

Let them feel them in their hands.

Ask them to put them in order from lightest to heaviest.

Ask if they can explain why they put them in this order.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Tell the children that in this lesson they will estimate how many $\frac{1}{2}$ kg bags will weigh 2kg.

They will use a beam balance to check their estimate.

4 TEACHER AND STUDENT ACTIVITY

Remind them how to use the beam balance.

Put a 1kg bag of rice on each side of the scale and show that they balance.

Put a 2kg bag on one side and ask how many 1kg bags they will need to balance it [2].

Check the answer using the beam balance.

Ask the children to draw a picture of the bags on the beam balance in their books.

Ask them how many $\frac{1}{2}$ kg bags of rice will weigh the same as 1kg [2].

Ask how they can check their answer and if they were correct.

Ask the children to draw a picture of the bags on the beam balance in their books.

Ask them how many $\frac{1}{2}$ kg bags of rice will weigh the same as 2kg [4].

Ask how they can check their answer and if they were correct.

Ask the children to draw a picture of the bags on the beam balance in their books.

Let the children take turns to weigh out different amounts of rice on the beam balance.

5 CONCLUSION AND ASSESSMENT

Show the children 4 different bags of rice which are labeled $\frac{1}{4}$ kg, $\frac{1}{2}$ kg, 1kg and 2kg.

Label 2 of the bags correctly and 2 incorrectly.

Ask if they can tell you which labels are correct and which are not.

Make a note of those children who do not understand how to use the beam balance. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Show different ways of making 2kg using $\frac{1}{4}$ kg, $\frac{1}{2}$ kg and 1kg bags of rice.

2 STARTER

Show the children a 3kg bag of rice.
Ask them to tell you 5 things that are heavier.
Ask them to tell you 5 things that are lighter.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Tell the children that in this lesson they will look at ways of making up 2kg using $\frac{1}{4}$ kg, $\frac{1}{2}$ kg and 1kg bags of rice.

4 TEACHER AND STUDENT ACTIVITY

Tell them that there are lots of ways of doing this. They have to find as many ways as possible.

They should draw the different ways in their books, e.g.



Work together as a class. Use the beam balance to find all of the ways.



5 CONCLUSION AND ASSESSMENT

Look at all the different ways they have found to make 2kg.

Ask which way has most bags of rice and which has least.

Make a note of those children who do not understand how small quantities add up to big quantities. Use this information when you plan tomorrow's lesson.

1 OBJECTIVE

Show different ways of making 3kg using $\frac{1}{4}$ kg, $\frac{1}{2}$ kg and 1kg bags of rice.

2 STARTER

Ask how much 5 bags of rice would cost if 1 bag costs K2 [K10].

Ask how much 10 bags would cost [K20].

Say that now each bag costs K3.

Ask how much 5 bags would cost [K15].

Ask how much 10 bags would cost [K30].

Repeat with different numbers.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Tell the children that in this lesson they will look at ways of making up 3kg using $\frac{1}{4}$ kg, $\frac{1}{2}$ kg, 1kg and 2kg bags of rice.

4 TEACHER AND STUDENT ACTIVITY

Tell them that there are lots of ways of doing this. They have to find as many ways as possible. They should draw the different ways in their books, e.g.



Work together as a class. Use the beam balance to find all of the ways.



5 CONCLUSION AND ASSESSMENT

Look at all the different ways they have found to make 3kg.

Ask which way has most bags of rice and which has least.

Make a note of those children who do not understand how small quantities add up to big quantities. Use this information when you plan tomorrow's lesson.

1 OBJECTIVE

Answer simple word problems involving weight.

2 STARTER

Show a number flashcard between 1 and 20.

Ask how many more you would need to make 10.

Ask how many more you would need to make 20.

Repeat with different number flashcards.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Tell the children that weight is important in business.

The cost of an item may depend on its weight, like meat, chickens and so on.

Explain that when we sell our goods at the market like gold, copra and cocoa we get the money according to their weights.

Today they are going to work out the cost of things in the market.

4 TEACHER AND STUDENT ACTIVITY

Tell the children a number story, e.g. 'Mother went to market with K10 to buy rice. One bag cost K3. Did she have enough money to buy 3 bags?'

Ask them how they could find out [they could add].

On the board write $3 + 3 + 3 = 9$

Ask if the answer is more than 10 or less than 10.

Ask again, 'Does mother have enough?' [yes] and 'How much change will she have?' [K1]

Ask how they can find out, e.g. they can count on from K9 to K10, so she has K1 change.

Tell the children more number stories.

Ask the children to write the sums in their books and to work out the answers.

Help those who are not able to work out the answers.

5 CONCLUSION AND ASSESSMENT

Ask a child to make up a number story for the others to answer.

See if the children can tell you how to work it out. Check to see if their answers were correct. Repeat this activity.

Make a note of those children who do not understand how to solve word problems and those who find it easy. Write this information in the class assessment file.



1 OBJECTIVE

Estimate and measure the size of containers found in the home using $\frac{1}{4}$ L, $\frac{1}{2}$ L and 1L.

2 STARTER

Ask the children to name all of the containers they have at home which they can put water in.

Write them on the board.

Ask them to arrange them in order from the smallest to the biggest.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Tell the children that the amount of liquid in any containers must always be known so that we can make decisions about measurements.

Explain that people usually measure liquids in litres (L).

On the board show them how to write $\frac{1}{4}$ L, $\frac{1}{2}$ L and 1L.

In this lesson, they will look at some containers from home. They will estimate how much liquid they hold and then measure it using $\frac{1}{4}$ L, $\frac{1}{2}$ L and 1L.

4 TEACHER AND STUDENT ACTIVITY

Show the children $\frac{1}{4}$ L, $\frac{1}{2}$ L and 1L containers.

Ask, 'Which is the biggest and which is the smallest?'

Mark the 1L measure to show $\frac{1}{4}$ L and $\frac{1}{2}$ L.

Show different sizes of cups, mugs, water bottles and other containers that are found in homes.

Tell them that they are going to estimate how much liquid each of these containers can hold.

Write the estimates on the board, e.g.:

Container	Estimate to nearest $\frac{1}{4}$ L, $\frac{1}{2}$ L or 1L	Measure to nearest $\frac{1}{4}$ L, $\frac{1}{2}$ L or 1L
Small cup		
Mug		
Coke bottle		

Fill the containers with water.

Show the children how to measure the liquid using the 1L measure.

Pour in the water from the cup. Ask if it is closest to $\frac{1}{4}$ L, $\frac{1}{2}$ L or 1L.

Write the results in your table.

Ask children the help you to measure the liquid from all the other containers.

5 CONCLUSION AND ASSESSMENT

Show a different container.

Ask if they can estimate how much liquid it can hold ($\frac{1}{4}$ L, $\frac{1}{2}$ L or 1L).

Ask them to measure the liquid.

Make a note of those children who cannot estimate the amount of liquid and those who cannot measure it. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Estimate, measure and record how many $\frac{1}{4}$ L and $\frac{1}{2}$ L containers it will take to fill a 1L bottle.

2 STARTER

Bring 5 children to the front of the class.

Ask the class to put them in order from the shortest to tallest child.

Ask if they can measure the height of the child in the middle.

Repeat with 5 different children.

3 INTRODUCTION

Tell the children that the skill of estimating is important. Making an estimate helps them to know if they have measured things correctly.

In this lesson they will find out how many $\frac{1}{4}$ L and $\frac{1}{2}$ L containers will fill up a 1L container.

Explain that another way of saying $\frac{1}{4}$ L is one fourth of 1L.

That means we need 4 of them to make a 1L.

Explain that when we say $\frac{1}{2}$ L it means we need 2 halves to make 1L.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

4 TEACHER AND STUDENT ACTIVITY

Show a container that will hold $\frac{1}{4}$ L.

Ask the children to estimate how much liquid it will hold: $\frac{1}{4}$ L, $\frac{1}{2}$ L or 1L?

Fill it up with water. Ask them to estimate how many of these bottles it will take to fill up a 1L container.

Ask the children to help you to pour this water into a 1L container.

Repeat the process until the 1L container is full.

Ask them to count how many bottles it took [4].

Write this answer on the board, then find out how many $\frac{1}{2}$ L will fill up the 1L container [2].

Give the children a 1L container filled with water.

Ask them to estimate how many $\frac{1}{4}$ L containers they can fill from the 1L.

Ask them to pour the water and to count how many [4].

Repeat using a $\frac{1}{2}$ L container.

Help children who are having problems doing this.

5 CONCLUSION AND ASSESSMENT

Show the children a 2L container.

Ask them to estimate how many 1L containers it will take to fill up a 2L container [2].

Ask how many $\frac{1}{2}$ L containers it will take [4] and how many $\frac{1}{4}$ L it will take [8].

Make a note of those children who cannot estimate the amount of liquid and those who cannot measure it. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Estimate, measure and record how many 1L containers it will take to fill a bucket.

2 STARTER

Show the children a cup.

Ask them to write down about how much water they estimate it will hold.

Repeat with mugs, pans and bottles.

Check their answers.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Tell the children that in this lesson they will find out how many 1L containers we will need to fill up a bucket.

Show them 2 or 3 buckets.

Ask if they are all the same size or different.

If they are different, tell the children to put them in order from smallest to biggest.

4 TEACHER AND STUDENT ACTIVITY

Choose the smallest bucket. Ask the children to estimate how many 1L containers it will take to fill the bucket.

Ask the children to count as you fill up the bucket using a 1L container.

When the bucket is full, write on the board how many 1L were needed to fill bucket.

Repeat with a bigger bucket.

Take the children outside and put them into groups.

Give each group a bucket of water and a 1L container.

Ask them to estimate how many 1L containers it would take to empty the bucket.

Ask them to count how many containers it took to empty it.

Tell them to write the number of 1L containers in their books.

Give them a different size bucket and ask them to repeat the activity.

Help children who are having problems doing this.

5 CONCLUSION AND ASSESSMENT

Ask the children to tell you how they did their activity.

Ask if there were any problems and how they solved their problems.

Ask if their estimates were good and if their measurements were correct.

Make a note of those children who cannot estimate the amount of liquid and those who cannot measure it. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Answer simple word problems involving capacity.

2 STARTER

Play 'Doubles and halves'.
Show a number flashcard between 1 and 10.
Ask the children to double the number.
Repeat for all the other flashcards.
Show even flashcards between 2 and 20.
Ask them to halve the numbers.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Tell the children that in this lesson, they will think about word problems and find answers to them.

4 TEACHER AND STUDENT ACTIVITY

Tell a story about capacity, e.g. 'A 1L carton of milk costs K8. A $\frac{1}{2}$ L carton of milk costs K5. Is it cheaper to buy 1L or the same amount of milk in $\frac{1}{2}$ L cartons?'

Ask the children how to work it out. If they need help, ask how many $\frac{1}{2}$ L cartons will be the same as a 1L carton [2].

Ask how much 2 $\frac{1}{2}$ L cartons will cost [K10].

Ask if this is more or less than the 1L carton. Ask again which is cheaper.

Change the numbers in this story or make up other stories like this. Ask the children to find the answers and write them in their books.

Help children who are having problems doing this.

5 CONCLUSION AND ASSESSMENT

Go over the stories you have told. Check that the children have answered them correctly.

Tell another number story. Ask the children to work it out without your help.

Ask them to write the answer in their books.

Make a note of those children who cannot solve the problems and those who find it easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Answer simple word problems involving capacity.

2 STARTER

Count in twos from 0 to 100 and backwards from 100 to 0.

LESSON TOPIC: Time and Duration

STRAND: Quantities and Measurement

CONTENT STANDARD: 2.2.2

3 INTRODUCTION

Tell the children that in this lesson, they will think about different word problems and find answers to them.

4 TEACHER AND STUDENT ACTIVITY

Tell a story about capacity, e.g. 'James had a bucket. He wanted to know how many litres it would hold. He had a $\frac{1}{2}$ L bottle. It took ten $\frac{1}{2}$ L bottles to fill up his bucket. How many litres did his bucket hold?'

Ask the children how to work out the answer.

If they need help, ask how many $\frac{1}{2}$ L bottles make 1L [2].

Show them how to draw the bottles on the board. If 2 bottles are the same as 1L, they can count how many litres 10 bottles make [5L].



Change the numbers in this story or make up other stories like this. Ask the children to do the drawings and write the answers in their books.

Help any children who are having problems doing this.



5 CONCLUSION AND ASSESSMENT

Go over the stories you have told. Check to see if the children have answered them correctly.

Tell another number story. Ask the children to work it out without your help.

Tell them to do the drawings and write the answer in their books.

Make a note of those children who cannot solve the problems and those who find it easy. Write this information in the class assessment folder.

1 OBJECTIVE

Know the days of the week and months of the year.

2 STARTER

Teach the children a rhyme:

'Sunday, Monday, Happy Days.

Tuesday, Wednesday, Happy Days.

Thursday, Friday, Happy Days.

Saturday, a day to play.'

Repeat the song.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Tell the children that there are 7 days in a week.

Ask them to say the names really loudly.

As they say the day, show a flashcard with the day written on it.

Ask which days they come to school.

Name a day and ask them to tell you something that they like to do on that day.

Repeat with the other days.

4 TEACHER AND STUDENT ACTIVITY

Teach the children a song for the months of the year.

Sing it to the tune of 'Ten Little Indians':

'January, February, March, and April,

May, June, July, August, and September,

October, November, and December,

These are the months of the year.'

Tell them there are 12 months in a year.

Ask them to sing the song again and to count the months on their fingers.

Ask them which month Christmas comes in and which months there are school holidays in, etc.

Show them flashcards with the months written on them.

Say the month as you show them the flashcard.

5 CONCLUSION AND ASSESSMENT

Ask if the children can say the days of the week and the months of the year.

Ask, 'Which day comes before Thursday?', 'Which month comes after April?', 'Which is the last month of the year?' and 'Which is the first month of the year?'

Make a note of those children who do not know the days of the week and the months of the year. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Learn the order and sequence of familiar events, e.g. morning, recess, lunch and afternoon.

2 STARTER

Sing the song for the months of the year.
Show a flashcard with the name of a month written on it.
Ask, 'Which month is it?'
Repeat with other flashcards.
Ask questions, e.g. 'Which month comes before July?'

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Tell the children that a school day is broken up into different parts.

Explain that this helps us to plan our days.

Tell them about what you do on a school day from the time you get up to the time you go to bed.

Ask them to tell you about what they do on a school day

4 TEACHER AND STUDENT ACTIVITY

On the board draw a plan of a school day, e.g.

Time	What happens
8 o'clock	Children arrive Lessons start
10 o'clock	Recess
After recess	More lessons
12 o'clock	Lunch time
1 o'clock	Afternoon lessons
3 o'clock	Lessons finish Go home

Tell them that 12 o'clock is noon. Before noon is called the morning. After noon is called the afternoon.

Together talk about what happens in school in the morning and what happens in the afternoon.

Ask them if they can put these events in order according to which come first during a school day.

1. Recess, afternoon, morning, lunch.
2. Lunch, going home, lessons finish, recess.
3. Afternoon, lunch, recess, lessons start.

5 CONCLUSION AND ASSESSMENT

Check that the children were able to put school events in order

Ask them to put in the correct order the things that happen inside and outside of school, e.g. arrive at school, go to bed, eat lunch, get up

Make a note of those children who cannot do this and those that find it very easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Read the day, date, month and the year on a calendar.

2 STARTER

Say the rhyme for the days of the week.

Show a flashcard with the name of a day written on it.

Ask, 'Which day is it?'

Repeat with other flashcards.

Ask questions, e.g. 'Which day comes before Saturday?'

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Show the children a big drawing of one month from a calendar.

Let them look at your drawing and ask what the calendar tells you.

Point to the year, the month, the days and the numbers. Show how it is organized into weeks. Tell them that the numbers tell us the date.

Tell them today's date, e.g. Monday, 29th September, 2015.

Write the date on the board. Ask them to say the date with you.

Point to a date on your big drawing. Ask them to say the date out loud.

Tell them that a calendar helps us to plan things. We know the date that school starts and we know the dates when there are holidays.

4 TEACHER AND STUDENT ACTIVITY

Give the children a page from an old calendar. Ask them 10 questions about it, e.g.

1. Which month is it?
2. How many days are in the month?
3. What day is the first day of the month?
4. What is the date of the last day of the month?

Help children who are finding this difficult.

5 CONCLUSION AND ASSESSMENT

Go back to your drawing of the calendar.

Ask more questions about it, e.g. 'What is the date of the first Monday?', 'What is the date of the last Saturday?' and 'How many Tuesdays are there in the month?'

Make a note of those children who cannot do this and those that find it very easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Estimate and record how long some daily events last, e.g. hours of daylight, darkness, morning, afternoon, lunch break, mathematics lessons.

2 STARTER

Say a day of the week or a month of the year.
Ask the children to tell you the day before this day or the month before this month.
Repeat, asking which is the day after this day and which month is after this month.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Show the children a clock.

Tell them that from 1 o'clock to 2 o'clock in the afternoon is 1 hour.

Explain that there are 24 hours in a day.

One day, 24 hours, can be timed from, e.g. 3 o'clock one afternoon to 3 o'clock the next afternoon.

Show them that in 1 day the hands of the clock go around twice.

4 TEACHER AND STUDENT ACTIVITY

Tell the children that in Papua New Guinea, it is light for about 12 hours every day.

Ask what time it gets dark and what time it gets light.

Ask if they can estimate how long their lunch break is.

Show them on the clock how many hours it is.

Ask if they can estimate how long their mathematics lessons are.

Show them on the clock that they last for 1 hour.

Ask if recess time is 1 hour or less.

Show them on the clock.

Ask them other questions about how long different parts of their school day last.

Help children who are finding this difficult.

5 CONCLUSION AND ASSESSMENT

Ask the children to think of a sports day.

Ask, 'At what time do sporting activities begin?', 'At what time do sports finish?' and 'How many hours do the children play sports for?'

Show a clock to help them count the hours.

Make a note of those children who cannot do this and those that find it very easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Read flash cards with days, dates, months and the year

2 STARTER

Ask the children to make a list of things that they can do in less than an hour. Check to see if they seem correct.

Ask them to make another list of things that last for more than 2 hours. Check to see if they seem correct.

Together, count from 1 to 31.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Show flashcards for the days of the week and the months of the year.

Ask the children to repeat the words after you.

Show a flashcard with the date Tuesday, 4th November 2015.

Read it aloud and ask them to say it after you.

Repeat with other dates.

4 TEACHER AND STUDENT ACTIVITY

Show more flashcards with the date.

Ask, 'What is the day?', 'What is the month?', 'What is the year?' and 'What is the date?'

Repeat for other flashcards.

Put the children into groups.

Give each group 5 flashcards.

Tell them that they must work together to decide: the year, the month, the day and the date on each card.

Help children who are finding this difficult.

5 CONCLUSION AND ASSESSMENT

Ask each group to show you one of their flashcards and to say the information that is on it.

Check if they were correct.

Repeat with other groups.

Together count from 1 to 31.

Make a note of those children who cannot do this and those that find it very easy. Write this information in the class assessment folder.



1 OBJECTIVE

Cut out a simple clock face and write in the numbers.

2 STARTER

Ask the children what they do at different times of the day, e.g. at 8 o'clock in the morning, noon and 4 o'clock in the afternoon.

Say activities, e.g. 'eat breakfast', and ask what time they do these things.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Show a clock face and remind them that this is what we use to tell the time.

Show them the numbers and ask what they tell you.

Draw a big circle on the paper, and cut it out.

Mark the place on the circle where you will write 12, 3, 6 and 9.

Ask the children what number they will write next to each mark then write them in.

Put marks for the other numbers on the circle. Together, fill in the numbers.

Cut out 1 small hand and 1 long hand and fix them on the clock face with a fastener.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Tell them to make their own clock faces just like you have made.

Help them by giving them instructions:

1. Draw a circle on paper and cut it out.
2. Make marks on the circle for 12, 3, 6, and 9.
3. Write in 1 and 2 between 12 and 3.
4. Write in 4 and 5 between 3 and 6.
5. Write in 7 and 8 between 6 and 9.
6. Write in 10 and 11 between 9 and 12.
7. Cut out 1 small hand and 1 long hand and fix them to the clock face.

Help any children who are finding this difficult.

5 CONCLUSION AND ASSESSMENT

Check to see if the children have made their clock faces correctly.

Ask them to use their clock faces to show you different times, e.g. 2 o'clock.

Repeat for other times.

Make a note of those children who cannot do this and those that find it very easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Show 'half past' on the clock face and tell the time using 'half past'.

2 STARTER

Show a flashcard with a month on it. Ask the children to read it.

Ask, 'What is the month before and the month after?'

Repeat this for all of the other months.

Sing the months of the year song.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Tell the children that we need to tell the time so we are not late arriving to school or church. If we are late we can miss out on good things.

Remind them that if the short hand points at the 3 and the long hand points at 12, it is 3 o'clock. Repeat this for other times.

Tell them that the long hand of the clock keeps moving. It starts at 12 and moves clockwise past 1, 2, 3, 4 and 5. When it reaches 6 it is half way around the clock.

Show on a clock face the short hand just after 2 and the long hand on the 6. Say, 'It is half past two.'

When the long hand has moved all the way around to the 12 and the short hand has moved on to the 3, we say it is 3 o'clock.

Repeat this with other half past times.

4 TEACHER AND STUDENT ACTIVITY

On the clock face show 8 o'clock and half past 8.

Ask the children to tell you the times. Repeat for other times.

Say half past 4 and ask them to show you this time on the clock faces they made.

Repeat for other times.

Help any children who are finding this difficult.



5 CONCLUSION AND ASSESSMENT

Ask the children to use their clock faces to show you different times, e.g. 2 o'clock and half past 2.

Repeat for other times.

Make a note of those children who cannot do this and those that find it very easy. Use this information when you plan tomorrow's lesson.

1 OBJECTIVE

Show 'quarter past' on the clock face and tell the time using 'quarter past'.

2 STARTER

Show a flashcard with a day on it. Ask the children to read it.

Ask, 'What is the day before and the day after?'

Repeat for all of the other days.

Say the days of the week rhyme.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Tell the children that the positions 12, 3, 6 and 9 are important positions on the clock face. These numbers divide up the face of the clock into 4 equal parts. Each part is a quarter. When it is 8 o'clock, the short hand points at 8 and the long hand points at 12. When the long hand moves around from 12 to 3, the time is called quarter past 8. Show these points on the clock.

Repeat this for 2 o'clock and quarter past 2.

4 TEACHER AND STUDENT ACTIVITY

Show the following times on the clock face and ask the children to tell you the time:

1. 7 o'clock then quarter past 7.
2. 9 o'clock then quarter past 9.
3. 12 o'clock then quarter past 12.
4. 6 o'clock then quarter past 6

Put the children into pairs and ask them to show the following times on their own clock faces:

1. Quarter past 3.
2. Quarter past 8.
3. Quarter past 10.

Help any children who are finding this difficult.



5 CONCLUSION AND ASSESSMENT

Ask them to use their clock faces to show you different times, e.g. quarter past 5 and quarter past 1.

Make a note of those children who cannot do this and those that find it very easy. Use this information when you plan tomorrow's lesson.

1 OBJECTIVE

Tell and read the time using 'o'clock', 'half past' and 'quarter past'.

2 STARTER

Ask the children to tell you 5 things that last about 1 hour.

Ask the children to tell you 5 things that last about half an hour.

Ask the children to tell you 5 things that last about a quarter of an hour.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Show the clock face.

Remind the children that when the long hand is on the 12 it is the 'o'clock' position.

Remind them that the 12, 3, 6 and 9 divide the face of the clock into 4 equal parts called quarters. When the long hand moves around to 3, it is a quarter of the way around. We say it is 'quarter past'.

Remind them that when the long hand moves around to 6 on clock face it is half way around. We say it is 'half past'.

Tell them that the word 'o'clock' is short for 'of the clock'.

4 TEACHER AND STUDENT ACTIVITY

Show the children the following times on the clock face. Ask them to say what each time is:

1. 8 o'clock then quarter and half past 8.
2. 4 o'clock then quarter and half past 1.
3. 12 o'clock then quarter and half past 12.

Put them into pairs and ask them to show each other the following times on their clock face:

1. 6 o'clock then quarter and half past 6.
2. 9 o'clock then quarter and half past 9.
3. 3 o'clock then quarter and half past 3.

Help any children who are finding this difficult.

5 CONCLUSION AND ASSESSMENT

Ask them to use their clock faces to show you different times, e.g. 7 o'clock, quarter past 5 and half past 11.

Make a note of those children who cannot do this and those that find it very easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Read the time using 'quarter to'.

2 STARTER

Show flashcards for dates, days and months.
Check to see if the children can read them correctly.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Use the clock to show the children that when the long hand moves from 12 towards 6 we say the time is 'past' the hour. Show half past 10 and half past 2 on the clock face. Ask them to say the times.

When the long hand moves from 6 towards 12, we say the time is 'to' the hour.

Show the clock face and find 9. Explain that this is the 'quarter to' position.

Show quarter to 5 on the clock face. Ask the children to say 'quarter to 5'.

Tell them that in a quarter of an hour it will be 5 o'clock.

Show the long hand moving around from 4 o'clock to quarter past 4, half past 4, quarter to 5 and 5 o'clock. Ask the children to say the times.

4 TEACHER AND STUDENT ACTIVITY

Show the children the following times on the clock face. Ask them to say what each time is:

- 7 o'clock → quarter past 7 → half past 7 → quarter to 8 → 8 o'clock
- 10 o'clock → quarter past 10 → half past 10 → quarter to 11 → 11 o'clock
- 6 o'clock → quarter past 6 → half past 6 → quarter to 7 → 7 o'clock

Put them into pairs and ask them to show each other the following times on their clock face:

- 9 o'clock → quarter past 9 → half past 9 → quarter to 10 → 10 o'clock
- 5 o'clock → quarter past 5 → half past 5 → quarter to 6 → 6 o'clock
- 3 o'clock → quarter past 3 → half past 3 → quarter to 4 → 4 o'clock

Help any children who are finding this difficult.

5 CONCLUSION AND ASSESSMENT

Ask the children to use their clock faces to show you different times, e.g. 3 o'clock, quarter past 3, half past 3, quarter to 4 and 4 o'clock.

Make a note of those children who cannot do this and those that find it very easy. Write this information in the class assessment folder



1 OBJECTIVE

Subtract sets of objects and numbers from 0 to 50.

2 STARTER

Play 'Doubles and halves'.

Ask, 'What is double 1?' and 'What is double 10?'

Repeat for 2 and 20, 3 and 30, 4 and 40 then 5 and 50. Ask if the children can see the pattern.

Ask, 'What is half of 2 and half of 20?'

Repeat for 4 and 40, 6 and 60, 8 and 80 then 10 and 100.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

With the class, count 30 stones into a tin.

Take out 7 stones and ask how many are left [23].

Ask what number sentence you should write.

Write on the board $30 - 7 =$

Ask how you could find the answer, e.g. count the stones in the tin, count backwards on fingers or count backwards on a number line.

Ask what the answer is then write it in: $30 - 7 = 23$

Repeat using different numbers of stones.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs. Give them a pile of stones.

Tell them to make up subtraction problems and use the stones to find the answer.

Tell them to write the number sentences in their books.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Ask one pair to tell you one of their problems.

Ask the class to work it out.

Check to see if they agree with the pair.

Repeat with other pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Subtract sets of objects and numbers from 50 to 100.

2 STARTER

Show the children a number flashcard between 1 and 19.

Ask, 'How many more need to be added make 20'.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

On the board, write $75 - 22 =$

Ask the children if it is an addition or subtraction problem.

Count sticks into bundles of 10.

Count out 7 bundles of 10 and 5 more to show 75 sticks.

Show them how to take away 2 bundles of 10 and 2 more to remove 22 sticks.

Count how many sticks are left.

Write $75 - 22 = 53$

Ask the children to write the number sentence in their books.

4 TEACHER AND STUDENT ACTIVITY

Continue working as a whole class.

Write $86 - 34 =$

Ask one child to count out bundles of sticks for 86.

Ask another child to take away bundles of sticks for 34.

Ask, 'What is the answer?' [52]

Repeat for other number sentences.

Each time, ask the children to write the number sentence in their book.

5 CONCLUSION AND ASSESSMENT

Show the class 6 bundles of 10 and 3 more and ask the number [63].

Repeat for other numbers.

Write $69 - 46 =$ on the board.

Ask a child to explain how to work it out using the sticks. Repeat with other number sentences.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Make number sentence and stories from numbers 0 to 50 using '+', '-', and '='.

2 STARTER

Show the children a number flashcard between 1 and 19.

Ask, 'How many more need to be added make 20'.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Tell the children a number story, e.g. 'The farmer worked very hard planting beans. In one hour she planted 24 beans and she planted another 24 in the next hour. How many beans did she plant altogether?' [48]

Ask the children what number sentence you could write. Listen to their answers.

On the board write $24 + 24 =$ and read the number sentence.

Tell them one way to find the answer is to say 'double 24'.

Remind them that 24 can be broken into $20 + 4$ and an easy way to find the answer is to double 20 then double 4 and add the answers together.

Write $20 + 20 = 40$, $4 + 4 = 8$ and $40 + 8 = 48$.

Repeat the story using ' $12 + 12$ '

4 TEACHER AND STUDENT ACTIVITY

Write 5 addition sums, e.g. $21 + 21 =$, $13 + 13 =$, $22 + 22 =$, $14 + 14 =$ and $23 + 23 =$ on the board.

Put the children into pairs. Tell them to work out the answers.

Write the number sentences in their books and read them out loud.

Ask them to make up their own number story for one of the sums and solve it.

5 CONCLUSION AND ASSESSMENT

Ask one pair to read out their story.

Ask the class to work it out.

Check to see if they agree with the pair.

Repeat with other pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Make number sentences and short stories from numbers 50 to 100 using '+', '-', and '='.

2 STARTER

Show the children a number flashcard between 1 and 19.

Ask, 'How many more need to be added make 20'.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Tell a number story, e.g. 'A boat left the island with 65 people on board. When they arrived at the first island 25 people got off. How many were left on the boat to travel to the second island?' [40].

Ask the children if it is an addition or a subtraction problem and how they know.

Ask, 'What number sentence should you write?'

Write $65 - 25 =$

Break 25 into $20 + 5$ and use the frog to hop back along a number line to find the answer.

Start at 65. Make two big hops of 10 to 55 and 45 and then count back another 5.

Write in the answer and read the number sentence:

'65 take away 25 equals 40'.

Or '65 minus 25 is the same as 40'.

Make up an addition story for the children to solve.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs. Give them a number line. Tell them an addition story.

Tell them to solve the problem and write down their number sentence.

Repeat with a subtraction number story.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Pick one pair to read out their first number sentences for the first story.

Check to see if the class agrees with the first pair.

Pick another pair to read out the number sentence for the second story.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Add sets of objects from 0 to 100 and make number sentences and short stories to solve subtraction problems.

2 STARTER

Show the children a number flashcard between 1 and 19.

Ask, 'How many more need to be added make 20'.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Tell the children a number story: 'My friend picked 25 bananas from one tree and 33 bananas from another tree to take to market. How many bananas did she take to market?' [58].

Ask what number sentence you could write to show the problem.

Write it on the board: $25 + 33 =$

Show the children 2 bundles of 10 sticks with 5 more added then 3 bundles of 10 sticks with 3 more added.

Ask the children, 'How many altogether?' Write in the answer [58].

Tell them that your friend then sold 35 bananas at market.

Ask, 'How many did she have left?' [23].

Ask what number sentence you could write to show the problem.

Write $58 - 35 =$

Ask one child to take away sticks to find the answer then write it in.

4 TEACHER AND STUDENT ACTIVITY

Continue working as a whole class.

Tell addition and subtraction stories.

Use bundles of sticks to find the answers.

Tell the children to write the number sentences in their books.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Ask a child to tell a number story.

Check to see if the class can find the answer.

Make a note of those children not able to solve the problems and those finding it too easy. Write this information in the class assessment folder.



1 OBJECTIVE

Count objects up to 50 and then count towards from 100 using a number line.

2 STARTER

Say the 2 times table together, then the 5 and 10 times table.

Shuffle the times table flashcards.

Show a card and ask the children to write the answer.

Check to see if they are correct.

Repeat with other cards.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

On the board draw 3 circles.

Put 8 balls in the first circle, 20 in the second and 5 in the third.

Ask how many balls there are altogether [33].

Remind the children that you can add numbers in any order but that it is easier to start with the biggest number.

Write $20 + 8 + 5 =$ on the board.

Ask them to work out the answer.

Tell them they can count the balls, use their fingers or use a number line to find the answer.

Repeat with 8, 40 and 8 balls [56]

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Give them piles of small objects and a number line from 0 to 100.

Write 10 groups of numbers on the board, e.g. 60, 6 and 10 then 9, 3, and 70, etc.

Tell the children to add each group using any method they like.

Tell them to write down the number sentences in their books.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their additions.

Ask them to explain how they did it and to show their number sentence.

Check to see if the class agrees with their answer and the way they did it.

Repeat with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Read, use and recognise '+', '-' and '=' in simple addition and subtraction problems.

2 STARTER

Show the children 3 fingers.

Ask, 'How many more do I need to make 10?' and 'How many more to make 20?'

If the children are having problems doing this, write both sums on the board so they can see the pattern.

Repeat using other numbers from 1 to 10.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Peg the '+', '-' and '=' cards on a washing line.

Point to the '+' sign and ask what words you could say when you see this sign in a number sentence.

Repeat this for the signs for '-' and '='.

Say the word 'minus' and ask the children to point to the sign for this word.

Repeat this using other words.

Repeat until the children are confident identifying the signs for the terms.

4 TEACHER AND STUDENT ACTIVITY

Write 10 addition and subtraction problems on the board, e.g. $15 + 23 = 38$

Put the children into pairs.

Tell one child to read the first number sentence out loud and the second child to listen.

Ask if she or he agrees with the first child.

Ask how many different ways they can find of saying the sentence.

Repeat for all of the number sentences.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Shuffle the '+', '-' and '=' flashcards.

Show a card.

Ask the children to tell you the answer. Repeat this with other cards.

Make a note of those children not able to read the number sentences and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Solve and write down repeated additions for 10, starting from any number.

2 STARTER

Cover 10 numbers on a 1 to 100 number square.

Ask the children which numbers you have covered.

Repeat with 10 different numbers.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Show the children the 1 to 100 number square.

Count on in tens starting at 10.

Remind them that when they count on in tens they go down one line on the number square each time.

Now count on in tens starting at 5.

Write the addition number sentences on the board: $5 + 10 = 15$, $15 + 10 = 25$, $25 + 10 = 35$, etc.

Ask the children if they can see the pattern.

Rub the number sentences off the board and ask children the answers to sums from this pattern, e.g. $25 + 10$, $35 + 10$ and so on.

When the children are confident, do repeated additions starting at 3.

4 TEACHER AND STUDENT ACTIVITY

Cover up the 1 to 100 number square and write 4 on the board.

Tell the children to write down and solve the number sentences for all of the additions of 10 from 4 to 94.

Move around the classroom, assessing the children by listening to them and giving help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Write 56 on the board.

Tell the children to take it in turns to tell you all of the additions of 10 up to 96.

Check that the children are able to tell you the answers.

Repeat with other numbers.

Make a note of those children not able to do the additions and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Using a 100 number square, say a number that is 10 less than a given number.

2 STARTER

Play 'I Am, You Are.'

Your rule is 'add 3'.

Say, 'I am 4' then point to the children and say, 'You are?'

They say 'I am 7'.

Repeat with other numbers between 1 and 20.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Point to a number on the number square. Ask which number is 10 less than this number.

Ask the children whether they will count on or count backwards to find the answer.

Show on the number square that when you count backwards by 10 you go up a line.

Repeat this, starting at different numbers between 50 and 100.

4 TEACHER AND STUDENT ACTIVITY

Tell the children to copy this table into their books and to fill it in.

10 less	My number	10 more
	45	
	63	
	29	
	71	
	58	
	84	

Move around the classroom, assessing the children by looking at their tables. Give help where needed. If some children are finding it too easy, give them more difficult problems.



5 CONCLUSION AND ASSESSMENT

Together with the children, work out all of the answers.

Write them in.

Make a note of those children not able to do the additions and those finding it too easy. Use this information when you plan tomorrow's lesson.

1 OBJECTIVE

Use mental arithmetic to answer questions about '10 more' and '10 less'.

2 STARTER

Say the 2 times table together, then the 5 and 10 times table

Shuffle the times table flashcards.

Put children into pairs, then point to a pair.

Show them a card and ask for the answer.

Repeat with different times table flashcards and different pairs.

LESSON TOPIC: Exploring circle and spheres

STRAND: Geometrical Figures

CONTENT STANDARD: 2.3.1

3 INTRODUCTION

Using a 1 to 100 number square, count on and backwards in tens starting at 10.

Point to a number and ask, 'Which is 10 more?' and 'Which is 10 less?'

Repeat for other numbers.

Tell a number story, e.g. 'A boy planted 24 seeds. His sister planted 10 more. His mother planted 10 less.'

Ask, 'How many seeds did his sister plant?' [34] and 'How many seeds did his mother plant?' [14]

Write down the number sentences: $24 + 10 = 34$ and $24 - 10 = 14$

Cover the number square and repeat the story using different numbers.

4 TEACHER AND STUDENT ACTIVITY

Tell 2 more stories.

Tell the children to write down the number sentences and solve the problem.

Move around the classroom, assessing the children by looking at their sentences. Give help where needed. If some children are finding it too easy, give them more difficult problems.



5 CONCLUSION AND ASSESSMENT

Read a number story, e.g. 'A man had 64 goats. His younger brother had 10 less and his older brother had 10 more. How many goats did each brother have?'

Ask the children to work in pairs to find the answers [54 and 74].

Make a note of those children not able to solve the problems and those finding it too easy. Write this information in the class assessment folder

1 OBJECTIVE

Collect different objects from the surroundings and bring to the classroom

2 STARTER

Sing the song three baby birds.

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

Tell the children to look outside the classroom and name and describe what they have seen.

4 TEACHER AND STUDENT ACTIVITY

Tell the children to go outside of their classroom and collect different objects that they have seen and bring them into the classroom.

Organise the children into groups and tell them to name and describe what they have collected.



5 CONCLUSION AND ASSESSMENT

Tell the children to name what they have collect and describe them to other groups.

Make note of those children who are not able to do this and those finding it too easy. Use this information when planning tomorrow's lesson.

1 OBJECTIVE

Select and sort these objects into two groups, e.g, small and green.

2 STARTER

Sing the song three baby birds

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

Do an example of arranging objects into two colours and e.g, green and yellow objects and tell the children to come and see what you've done.

4 TEACHER AND STUDENT ACTIVITY

Put the children in groups of 5 and tell them to organise their objects into two colours that you have shown.

Ask the children to organise their objects into the other two groups i.e, small and big.



5 CONCLUSION AND ASSESSMENT

Draw some objects on the board with two different coloured chalk and tell the children to arrange the objects into these two colours.

Make note of those children who are not able to do this and those finding it too easy. Use this information when planning tomorrow's lesson.

1 OBJECTIVE

Select and sort these objects into 3 groups, e.g, 'small', 'green' and 'small and green'.

2 STARTER

Sing the finger play song 'where is small man, where is ring man' and do actions using their fingers.

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

Do an example of arranging objects into three groups, e.g, green, yellow and 'small and green' objects and tell the children to come and see what you've done.

4 TEACHER AND STUDENT ACTIVITY

Put the children in groups of 5 and tell them to organise their objects into these colours that you have shown.

Ask the children to organise their objects into the three groups that you have shown to them.



5 CONCLUSION AND ASSESSMENT

Draw some different objects on the board with different coloured chalk and tell the children to arrange the objects into these three groups.

Make note of those children who are not able to do this and those finding it too easy. Use this information when planning tomorrow's lesson.

1 OBJECTIVE

Select and sort these objects into 3 groups e.g, 'hard', 'rough' and 'hard and rough'

2 STARTER

Sing the song three baby birds

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

Show the children two objects e.g, a piece of wood and a piece of mattress and squeeze these objects and show to them.

Tell the children to differentiate what they have seen. Explain hard and soft objects to the children.

Show two stones (rough and smooth stones) to the children and tell them to feel and describe. Explain the word rough and smooth to the children.

4 TEACHER AND STUDENT ACTIVITY

Put the children in pairs and tell them to organise their objects into 3 groups e.g, 'hard', 'rough' and 'hard and rough'

Tell the children to organise their object into 3 groups again eg, 'smooth', 'soft' and 'soft and smooth'



5 CONCLUSION AND ASSESSMENT

Ask the children to move to their friends objects and see what they have arrange.

Make note of those children who are not able to do this and those finding it too easy. Use this information when planning tomorrow's lesson.

1 OBJECTIVE

Do the tally of objects according to colour, shapes and sizes

2 STARTER

Say some riddles describing objects and students answer.

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

Ask the children to go into groups of 5 and distribute the papers to each group.

4 TEACHER AND STUDENT ACTIVITY

Tell the students to arrange their objects into two different colours eg. yellow and green and do their tally of what they have arranged.

Tell the students to arrange their objects into two different shapes e.g, big and small and do their tally of what they have arranged.



5 CONCLUSION AND ASSESSMENT

Ask the children to count their tally and present them to the whole class

Make note of those children who are not able to do this and those finding it too easy. Use this information when planning tomorrow's lesson.

1 OBJECTIVE

Make a whole class simple pictorial graph.

2 STARTER

Sing 'on my way to school I met a little friend'

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

Show a sample pictorial graph to the children and explain what it means. Eg,

4 TEACHER AND STUDENT ACTIVITY

Tell the children to create their simple class pictorial graph by observing your example.



5 CONCLUSION AND ASSESSMENT

Ask the children to predict their own pictorial graphs to their friends in pairs.

Ask few children to come to the front and present what they have done.

Make note of those children who are not able to do this and those finding it too easy. Use this information when planning tomorrow's lesson.

1 OBJECTIVE

Answer simple questions about the information on the graph.

2 STARTER

Sing the song '3 fat piggies sitting on the wall'

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

Draw simple pictures on the board and ask the children to write their correct numbers next to the pictures

.e.g,

4 TEACHER AND STUDENT ACTIVITY

Draw a simple pictorial graph and tell the children to answer questions on that graph.

Write some simple questions on the graph and children answer.

Eg. - How many leaves are green?

- What colour of leaves has the highest number?



5 CONCLUSION AND ASSESSMENT

Go around supervising and correcting their work.

Tell students to give answers of the questions they have done.

Make note of those children who are not able to do this and those finding it too easy. Use this information when planning tomorrow's lesson.

1 OBJECTIVE

In a small group, make and draw a simple pictorial graph.

2 STARTER

Sing 'Liklik circle, bikpelacircle' and do action'

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

Ask children to go into groups of 5 children.

4 TEACHER AND STUDENT ACTIVITY

Show the children an example of a simple pictorial graph.

Tell the children to make and draw their own simple pictorial graph.



5 CONCLUSION AND ASSESSMENT

Ask the children in other groups to go around and see what their friends have drawn and make.

Ask a group member in each group to present their work to the whole class.

Make note of those children who are not able to do this and those finding it too easy. Use this information when planning tomorrow's lesson.

1 OBJECTIVE

Ask and answer questions about information on their graphs.

2 STARTER

Sing '3 baby birds sitting on the tree'

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

Tell children to ask questions on their friend's chart and their friend can answer in groups.

4 TEACHER AND STUDENT ACTIVITY

Give some questions on each group's chart and tell the group to identify and answer the questions.

Eg, How many girls are in our class?

How many boys are small and how many are big?



5 CONCLUSION AND ASSESSMENT

Do more questions and let the children to answer.

Ask the children to answer the questions orally to the class.

Make note of those children who are not able to do this and those finding it too easy. Use this information when planning tomorrow's lesson.

1 OBJECTIVE

Write a sentence to say what their graph shows.

2 STARTER

Say a riddle and let the children answer.eg;
Who am I? I have 4 legs when I am a small,
two legs when I am young and 3 legs when I
am old.

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

Tell the children to say a sentence regarding their pictorial graph.

4 TEACHER AND STUDENT ACTIVITY

Ask children to write a sentence on their graph on what it shows.



5 CONCLUSION AND ASSESSMENT

Ask each child to read their sentence to the whole class.

Make note of those children who are not able to do this and those finding it too easy. Use this information when planning tomorrow's lesson.

1 OBJECTIVE

Recognise number patterns in addition problems.

2 STARTER

Tell the children that today's special number is 10.

Give them 3 minutes to write down all the different number sentences they can with an answer of 10.

Explain that they can do additions or subtractions.

Share the answers.

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

Put the children in a circle so that they can see what you are doing.

Pull out 2 sticks and ask, how many there are.

Put 3 more sticks next to them.

Ask, how there are now [5].

Write on the board $2 + 3 = 5$

Put a bundle of 10 beside the original 2.

Point to the pile of 12 and ask how many there are.

Write this on the board under the first number sentence, e.g. $2 + 3 = 5$, $12 + 3 = 15$

Continue in this way, adding another bundle of 10 sticks each time.

Ask if the children can begin to predict what the answer will be and if they can see that a pattern is forming.

Repeat the activity starting with $9 + 4 =$

Show the children a 1 to 100 number square.

Show them the patterns that your additions make.

5 CONCLUSION AND ASSESSMENT

On the board, write $7 + 2 = 9$

Ask the children to guess the answer to $57 + 2 =$

Check the answer on the number square [59]. Check to see if their guesses were correct.

Repeat for different numbers.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lessons.

4 TEACHER AND STUDENT ACTIVITY

Put the children into groups.

Give them bundles of sticks and ask them to repeat the last activity starting with $7 + 5 =$



1 OBJECTIVE

Recognise 'fact families' for numbers up to 10.

2 STARTER

Tell the children that today's special number is 12.

Give them 3 minutes to write down all the different number sentences they can with an answer of 12.

Explain that they can do additions or subtractions.

Share the answers.

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

Write the number 5 on the board.

Ask the children to tell you all the different ways you can add numbers together to make 5.

Write these in order on the board:

$$1 + 4 = 5$$

$$2 + 3 = 5$$

$$3 + 2 = 5$$

$$4 + 1 = 5$$

Ask the children what patterns they can see, e.g. as the first number gets 1 bigger, the second number gets 1 smaller.

Bring 1 girl and 4 boys to the front of the class.

Say $1 + 4 = 5$

Ask the girl to sit down.

Say $5 - 1 = 4$

Ask the girl to stand up and the boys to sit down.

Say $5 - 4 = 1$

Write these number sentences next to each other on the board:

$$1 + 4 = 5, 5 - 1 = 4, 5 - 4 = 1$$

Repeat for $2 + 3 = 5$

Tell the children that we call these 'fact families' or 'number families'.

5 CONCLUSION AND ASSESSMENT

Ask one pair to show you their fact family for 6.

Check to see if they were correct.

Repeat for fact families for 7, 8, 9 and 10.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lessons.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Give each pair a number between 6 and 20.

Tell them to work out the fact families for their number.

Tell them to write all of the number sentences in their books.

Make a display of fact families for numbers up to 10.

Put the display on the classroom wall.



1 OBJECTIVE

Recognise number patterns in subtraction problems.

2 STARTER

Mark 3 bottle tops with numbers that will add up to 10, e.g. 2, 3 and 5.

Hide the tops in your hand.

Ask 1 child to pick a top and show the number.

Ask a second child to pick a top and show the number.

Ask the children to work out the number on the top that is still in your hand.

Tell them to show the answer with their fingers.

Repeat with 3 different numbers.

3 INTRODUCTION

On the board write 39.

Ask how many would be left if you took away 5.

Write $39 - 5 = 34$

Write $49 - 5 =$ and ask the answer.

Write $49 - 5 = 44$

Repeat for 69 and 89.

Ask the children if they can see a pattern in the answers.

Ask them to describe the pattern.

Show them the pattern on the 1 to 100 number square.

4 TEACHER AND STUDENT ACTIVITY

Put the children into groups of 3.

Give each group number cards for 11, 21, 31, 41, 51, 61, 71, 81 and 91.

Ask some groups to subtract 3 from each number, some groups to subtract 4 and some groups to subtract 6.

Tell them to write their number sentences in their books.

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

5 CONCLUSION AND ASSESSMENT

Ask one group to tell you their subtractions and to show you the answers on the 1 to 100 number square.

Check to see if they were correct.

Ask if they could recognise the pattern.

Repeat for other groups.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lessons.



1 OBJECTIVE

Recognise number patterns in subtractions.

2 STARTER

Mark 3 bottle tops with numbers that will add up to 10, e.g. 2, 3 and 5.

Hide the tops in your hand.

Ask 1 child to pick a top and show the number.

Ask a second child to pick a top and show the number.

Ask the children to work out the number on the top that is still in your hand.

Tell them to show the answer with their fingers.

Repeat with 3 different numbers.

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

On the board write 39.

Ask how many would be left if you took away 5.

Write $39 - 5 = 34$

Write $49 - 5 =$ and ask the answer.

Write $49 - 5 = 44$

Repeat for 69 and 89.

Ask the children if they can see a pattern in the answers.

Ask them to describe the pattern.

Show them the pattern on the 1 to 100 number square.

4 TEACHER AND STUDENT ACTIVITY

Put children into groups of 3.

Give each group number cards for 11, 21, 31, 41, 51, 61, 71, 81 and 91.

Ask some groups to subtract 3 from each number, some groups to subtract 4 and some groups to subtract 6.

Tell them to write their number sentences in their books.

5 CONCLUSION AND ASSESSMENT

Ask one group to tell you their subtractions and to show you the answers on the 1 to 100 number square.

Ask if they were correct and they could recognise the pattern.

Repeat for other groups.

Make a note of those who couldn't do this and those that found it too easy. Think about this when you plan tomorrow's lessons.



1 OBJECTIVE

Explain how they recognise even and odd numbers.

2 STARTER

Play, 'I'm thinking of a number.'

Tell the children you are thinking of a number between 0 and 20.

Tell them that they have to guess your number by asking questions, e.g. 'Is it odd?' and 'Is it more than 10?'

Tell them you can only answer yes or no to their questions.

Repeat with a number between 0 and 50 or 50 and 100.

3 INTRODUCTION

Tell the children to line up in pairs.

Together count the pairs, e.g. 2, 4, 6, 8, 10.

If there is a child without a partner count them last.

When you reach the end of the line of pairs, ask if everyone has a partner.

Ask if there are an even or odd number of children in the class.

Ask why they think this.

Ask if there were 21 children, they would be able to line up in pairs.

Ask if 21 is an odd or an even number.

Let the children give their opinion.

Line up 21 children to see. Ask if they were correct.

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

4 TEACHER AND STUDENT ACTIVITY

Show the children a 1 to 100 number square.

Together count from 2 to 100 in even numbers.

Ask them to look at the even numbers and tell you any patterns that they see.

For example, all even numbers end in 0, 2, 4, 6 or 8.

Now count from 1 to 99 in odd numbers.

Ask them to look at the odd numbers and tell you any patterns they see.

For example, all odd numbers end in 1, 3, 5, 7 or 9.

5 CONCLUSION AND ASSESSMENT

Write 10 numbers on the board.

Point to each one and ask if it is even or odd.

Ask why they think this.

Make a note of those who couldn't do this and those that found it too easy. Make notes in your class assessment folder.



1 OBJECTIVE

Count objects up to 50 and then count towards 100 using a number line.

2 STARTER

Say the 2 times table together, then the 5 and 10 times table.

Shuffle the times table flashcards.

Show a card and ask the children to write the answer.

Check to see if they are correct.

Repeat with other cards.

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

On the board draw 3 circles.

Put 8 balls in the first circle, 20 in the second and 5 in the third.

Ask how many balls there are altogether.

Remind the children that you can add numbers together in any order.

Ask if it is easier to start with the biggest number.

Write $20 + 8 + 5 =$ on the board.

Ask them to work out the answer [33].

Tell them they can count the balls, use their fingers or use a number line to find the answer.

Repeat with 8, 40 and 8 balls.

4 TEACHER AND STUDENT ACTIVITY

Put the children into pairs.

Give them piles of small objects and a number line from 0 to 100.

Write 10 groups of numbers on the board, e.g. 60, 6 and 10; 9, 3, and 70.

Tell the children to add each group using any methods they like.

Tell them to write down the number sentences in their books.

5 CONCLUSION AND ASSESSMENT

Pick one pair to show one of their additions.

Ask them to explain how they did it and to show their number sentences.

Ask if the class agrees with their answer and the way they did it.

Repeat with 2 more pairs.

Make a note of those children not able to solve the problems and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Read, use and recognise '+', '-' and '=' in simple addition and subtraction problems.

2 STARTER

Show the children 3 fingers.

Ask how many more are needed to make 10.

Ask, 'How many more are needed to make 20?'

If children are having problems doing this, write both sums on the board so they can see the pattern.

Repeat using other numbers 1 to 10.

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

Peg the '+', '-' and '=' cards on a washing line.

Point to the '+' sign and ask what words you could say when you see this sign in a number sentence.

Repeat for '-' and '='

Say the word 'minus' and ask children to point to the sign for this word.

Repeat using other words.

Repeat until the children are confident.

4 TEACHER AND STUDENT ACTIVITY

Write 10 addition and subtraction problems on the board, e.g. $15 + 23 = 38$

Put the children into pairs.

Ask one child to read the first number sentence out loud.

Ask the second child to listen.

Ask if she or he agrees with the first child.

Ask, 'How many different ways can you find of saying the sentence?'

Repeat for all of the number sentences.

Move around the classroom, assessing the children by listening to them. Give help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Shuffle the '+', '-' and '=' flashcards.

Show a card.

Check to see if the children can tell you the answer.

Repeat with other cards.

Make a note of those children not able to read the number sentences and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Solve and write down repeated additions of 10 starting from any number.

2 STARTER

Cover 10 numbers on a 1 to 100 number square.

Ask the children which numbers you have covered.

Repeat with 10 different numbers.

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

Show the children the 1 to 100 number square.

Count on in tens starting at 10.

Remind them that when they count on in tens they go down one line on the number square each time.

Now count on in tens starting at 5.

Write the following addition number sentences on the board:

$5 + 10 = 15$; $15 + 10 = 25$; $25 + 10 = 35$ and so on.

Ask the children if they can see the pattern.

Rub the number sentences off the board and ask children the answers to sums, e.g. $25 + 10$, $35 + 10$ and so on.

When they are confident, do repeated additions starting at 3.

5 CONCLUSION AND ASSESSMENT

Write 56 on the board.

Tell the children to take it in turns to tell you all of the additions of 10 up to 96.

Check to see if the children can tell you the answer. Repeat this activity with other numbers.

Make a note of those children not able to do the additions and those finding it too easy. Use this information when you plan tomorrow's lesson.

4 TEACHER AND STUDENT ACTIVITY

Cover up the 1 to 100 number square and write 4 on the board.

Tell the children to write down and solve the number sentences for all of the additions of 10 from 4 to 94.

Move around the classroom, assessing the children by listening to them and giving help where needed. If some children are finding it too easy, give them more difficult problems.



1 OBJECTIVE

Using a 100 number square, saying a number that is 10 less than a given number.

2 STARTER

Play 'I am, you are.'

Say that your rule is 'add 3'.

Say 'I am 4,' point to the children and say 'you are?'

They say 'I am 7'.

Repeat with other numbers from 1 to 20.

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

Point to a number on the number square.

Ask which number is 10 less than this number.

Ask the children whether they will count on or count backwards to find the answer.

Show on the number square that when you count backwards by 10 you go up a line.

Repeat by starting at different numbers between 50 and 100.

4 TEACHER AND STUDENT ACTIVITY

Tell the children to copy this table into their books and to fill it in.

10 less	My number	10 more
	45	
	63	
	29	
	71	
	58	
	84	

Move around the classroom, assessing the children by looking at their tables. Give help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Together with the children, work out all of the answers.

Write them in.

Make a note of those children not able to do the additions and those finding it too easy. Use this information when you plan tomorrow's lesson.



1 OBJECTIVE

Use mental arithmetic to answer questions about 10 more and 10 less.

2 STARTER

Say the 2 times table together, then the 5 and 10 times table.

Shuffle the times table flashcards.

Put children into pairs.

Point to a pair.

Show them a card. Ask for the answer.

Repeat the activity with different cards.

LESSON TOPIC: Exploring Multiplication table

STRAND: Data and Mathematical Relations

CONTENT STANDARD: 2.4.1

3 INTRODUCTION

Using a 1 to 100 number square, count forwards and backwards in tens, starting at 10.

Point to a number and ask which is 10 more and which is 10 less.

Repeat for other numbers.

Tell a story, e.g. 'A boy planted 24 seeds. His sister planted 10 more. His mother planted 10 less.'

Ask, 'How many seeds did his sister plant?' and 'How many seeds did his mother plant?'

Write down the number sentences: $24 + 10 = 34$ and $24 - 10 = 14$

Cover the number square.

Repeat the story using different numbers.

4 TEACHER AND STUDENT ACTIVITY

Tell 2 more stories.

Tell the children to write down the number sentences and solve the problem.

Move around the classroom, assessing the children by looking at their sentences. Give help where needed. If some children are finding it too easy, give them more difficult problems.

5 CONCLUSION AND ASSESSMENT

Read a number story, e.g. 'A man had 64 goats. His younger brother had 10 less and his older brother had 10 more. How many goats did each brother have?'

Ask the children to work in pairs to find the answers.

Make a note of those children not able to solve the problems and those finding it too easy. Write this information in the class assessment folder



ASSESSMENT

Assessment should be carried out in each lesson. The teacher watches and listens to the children and judges how they are doing. This is called formative assessment. Elementary children do not usually have tests (summative assessment).

The Teacher Guide includes photocopiable assessment records for you to use. You need one for each child.

You should keep the assessment records in the child's assessment folder and fill them out at the end of every week. If you have it, you should also put in any written or picture evidence of the child's learning and progress.

At the end of each term you must bring out the child's assessment folder and use it in the parent/teacher conference.

When you pass the child on to their next teacher, you should sit down with them and discuss the child's progress and abilities using these sheets.

Children need to meet the benchmark for maths by the end of Elementary 2.

Assessment plan for each strand

The daily lesson plans have assessment tasks built in. At the end of each topic you must assess the children to make sure they are meeting the national standards. Report on the assessment tasks achieved by students at the end of Elementary 2 for each strand of study.

Ensure all Assessment tasks are assessed, recorded and reported using relevant and appropriate methods and approaches.

Strand 1: Number and Operation

Topics	Content standards	Performance standards	Lesson topics	Assessment tasks
Numbers up to 10,000	2.1.1 Appreciate and use their understanding of representing, recognising, reading and writing of numbers up to 10,000 using base 10 place value	a. Use base 10 system to represent, compare and order numbers up to 10,000. b. Recognise and write numbers in figures and words up to 10,000. c. Recognise and show position, order and value of numbers up to 10,000.	<ul style="list-style-type: none"> • Make sets of 10s and 100s using easier representation such as seeds or rice • Learn number of sets and name numbers in thousands e.g. How many sets of 100 • Position the numbers on place value table in Thousand, hundreds, tens and units 	<ul style="list-style-type: none"> • Show size of numbers using signs < or > and number line. • Let's explain the numbers in various ways • Using four card of 0,1,2,3, let's produce larger number and smaller number

			<ul style="list-style-type: none"> • Make numbers more than 1000 using place value blocks • Position on place value tables • Count ,Say and read the numbers • Read and write numbers in Roman Numerals • Compare which number is larger using the signs $>$ or $<$ • Sequence on number line and show on place value table. • connect numbers on map e.g. 1050 to 1051 	
Multiplication up to 2 digit numbers	2.1.2 Understand the meaning of multiplication as repeated addition and represent it in various situation	<p>a. Know situation where multiplication is used and its various ways of representation.</p> <p>b. Explain and demonstrate how to simplify the expression of adding the same number over and over (repeated addition).</p> <p>c. Explore how same numbers of objects are placed in each group to represent as total number.</p>	<p>Various ways of multiplication</p> <p>Multiplication by 20,30...90</p> <p>Calculate 2-digit number x 2-digit number</p> <p>e.g. 12×15</p> <p>Calculate 3 digit number x 2 digit number</p> <p>e.g. 120×15</p>	<ul style="list-style-type: none"> • Write multiplication sentence using sets of pictures. • Memorize multiplication table by using flash cards. • Extend the multiplication table • Explain multiplication table as repeated addition by using blocks and tape diagram

				<ul style="list-style-type: none"> • Explain the necessity of multiplication table of row 10 • Write multiplication sentence using sets of pictures. • Memorize multiplication table by using flash cards. • Extend the multiplication table • Explain multiplication table as repeated addition by using blocks and tape diagram • Explain the necessity of multiplication table of row 10 • Write multiplication sentence using sets of pictures. • Memorize multiplication table by using flash cards. • Extend the multiplication
Addition , Subtraction and Multiplication problems	2.1.3 Extend their understanding of addition, subtraction and multiplication to solve simple problems	<p>a. Use tape diagram to represent part –part and whole-part relationship in addition and subtraction representations.</p> <p>b. Divide objects into two and four parts equally using tape diagram and blocks in multiplication.</p> <p>c. Show different ideas of dividing equally.</p>	<p>Tape diagram for addition and subtractions</p> <p><i>e.g.</i> add diagrams of marbles and represent on tape diagrams</p> <p>Repeated addition for multiplication</p> <p>Relationship between addition and multiplication</p>	<ul style="list-style-type: none"> • Explain the tape diagram by repeated addition. • Explain various situations of addition and subtraction by tape diagram

Strand 2: Quantities and Measurement

Topics	Content standards	Performance standards	Lesson topics	Assessment tasks
Units of Volume	2.2.1 Understand and compare volume of liquids using the standard units of measurement for volume such as millilitre (<i>mL</i>), decilitre(<i>dL</i>) and Liter (<i>L</i>)	<p>a. Compare the relationship between the arbitrary units to standard units of volume and the necessity of changing to standard unit.</p> <p>b. Use measuring cups to produce 1dL cup and 1L bucket of water with enjoyment.</p> <p>c. Show how to measure with different measuring cups using the standard units of volume(<i>mL</i>, <i>dL</i>, <i>L</i>).</p> <p>d. Compare measuring units of volume to measure units of length to understand their difference.</p> <p>e. Use addition and subtraction operation to calculate volumes of liquids in millilitres, decilitres and litres problems.</p>	<p>Compare amounts of water in different containers</p> <p>How to measure the amount of water</p> <p>What is 1L?</p> <p>How many liters each container holds using 1L cup.</p> <p>Use smaller cups to find 1dL measuring cup</p> <p>Exercises on addition and subtraction problems of unit of volume</p>	<ul style="list-style-type: none"> Compare the water containers using measuring cups and discuss the difficulty of comparison Experience developing 1dL cup and to produce 1L Explain the relationship amongst L and dL Change the denomination such as L or dL for easier addition and subtraction and compare

Time and Duration	2.2.2 Use the scale on clock face to represent their daily activities and how long it takes.	a. Read and write units of time and duration in hours and day. b. Read the time duration after or before the clock time.	Seconds in relation to minutes Relationship between hours, minutes, seconds, Duration between morning, and afternoon Tell time in 24 hours in minutes and seconds and days Vertical addition and subtraction	<ul style="list-style-type: none"> • Use a situation such as running 50m, enjoy using a stop watch to record the duration and explain. • Use a travel situation in PNG, calculate the time difference in a duration and inverse operation of that difference. Use the calculation in vertical form through taking away and carrying difference of denomination such as 60 minutes
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Strand 3: Geometrical Figures

Topics	Content standards	Performance standards	Lesson topics	Assessment tasks
Exploring circle and sphere	2.3.1 Understand and investigate the common properties of sphere and circles as geometrical figures	a. through activities a. Identify the common properties of circles and sphere. b. Explore different ways of drawing circles. c. Using circles make different patterns and appreciate its beautifulness.	Circles <ul style="list-style-type: none"> • How to draw round shapes and name the properties of a circle e.g. circle is a round shape with distance from a centre point with radius of the same distance from the centre • Explore Radius and diameter with various circles • Explore shape of a ball, from above, from side and roll • Define a sphere • Find out more about sphere as in circles with different sizes 	<ul style="list-style-type: none"> • Enjoy drawing circle, using compass and explain the centre, radius and diameter • Find circles and spheres • Husk and crack the coconut shell and see the cross-section.

Strand 4: Data and Mathematical Relations

Topics	Content standards	Performance standards	Lesson topics	Assessment tasks
Exploring multiplication table	2.4.1 Understand the structure of multiplication tables and use it for up to 9 x multiplication table	a. Explore and find various patterns to produce the multiplication table. b. Use rules of multiplication in multiplication table to create patterns such as playing multiplication games.	<ul style="list-style-type: none"> • Multiplication 1 for numbers up to 100 • Multiplication 2 for tables of 2,5,3,4 • Flash card games, Multiplication 3 for tables of 6,7,8,9 and of 1 • Find their calculations • Multiplication Table • Multiplication Games • Multiplication more than 9 x9 	<ul style="list-style-type: none"> • Check the commutative operation on multiplication table. • Enjoy multiplication table game • Explain the rule of multiplication using multiplication tables

ASSESSMENT

Elementary 2 Term 1 Sample Assessment Record

Year: Class: E2, Mathematics Assessment Record,

Child's Name:

Wk	Term 1	Notes –	A, P, N	Evidence
1	Orientation			Y/N
2	Counting Count, read, write and order numbers 0-100 or more. Double and halve 2-50			Y/N
3	Comparing and ordering Compare and order sets of objects and numbers 0-100 Count from 1st -31st using a calendar.			Y/N
4	Place value Write numbers in hundreds, tens and units 0-100.			Y/N
5	Place value Break and combine number into hundreds, tens and units e.g. $75 = 70 + 5$ and $70 + 5 = 75$			Y/N
6	Addition Add sets of objects and numbers 0-100 or more Make number sentences and stories and solve addition problems 0-100 or more			Y/N
7	Addition Do repeated addition for number 10 Read and use +, and =			Y/N
8	Subtraction Make number sentences and stories to estimate and solve subtraction problems 0-100 or more			Y/N
9	Subtraction Use mental arithmetic to solve simple addition and subtraction sums 0-100 or more			Y/N

A = Achieved learning objectives for this week

P = partly achieved or achieved some of the learning objectives for the week

N = Not done, child did not follow this week's work

ASSESSMENT

Elementary 2 Term 2 Sample Assessment Record

Year: Class: E2, Mathematics Assessment Record,
Child's Name:

Wk	Term 2	Notes –	A, P, N	Evidence
1	Orientation			
2	Plane shapes (2D shapes) Identify , describe and name the most common 2D shapes in the environment			Y/N
3	Fractions Divide into halves and quarters whole objects and sets of objects			Y/N
4	Angles and directions Give, follow and draw simple directions and maps within classroom and school settings including turning directions, using half and quarter turns Describe angles as more than or less than a right angle			Y/N
5	Symmetry Identify two lines of symmetry in shapes and in the environment			Y/N
6	Extending and Using Patterns Recognize odd and even number patterns Recognize and use number patterns in addition and subtraction from 0-50			Y/N
7	Extending and Using Patterns Work out missing numbers e.g. 4, 5, ..., 6 or $A + 4 = 8$			Y/N
8	Area Compare, estimate and measure area using non-standard units			Y/N
9	Solids (3D shapes) Name, describe and compare solid shapes using mathematical names: cube; cuboid, sphere, cone and cylinder Identify 2D shapes in 3D shapes			Y/N

A = Achieved learning objectives for this week

P = partly achieved or achieved some of the learning objectives for the week

N = Not done, child did not follow this week's work

ASSESSMENT

Elementary 2 Term 3 Assessment Record

Year: Class: E2, Mathematics Assessment Record,

Child's Name:

Wk	Term 3	Notes –	A, P, N	Evidence
1	Orientation			
2	Place value Write numbers in hundreds, tens and units 0-100 Break and combine number into hundreds, tens and units e.g. $75 = 70 + 5$ and $70 + 5 = 75$			Y/N
3	Money Recognise notes to K100 and exchange and use coins up to K2 or more			Y/N
4	Money Solve simple money problems			Y/N
5	Addition Add sets of objects and numbers 0-100 or more Make number sentences and stories and solve addition problems 0-100 or more Do repeated addition for number 10 Read and use + and = signs			Y/N
6	Length Estimate, measure and record height, width and length using a metre ruler or rope Solve simple problems about length and height using 1m, $\frac{1}{2}$ m and $\frac{1}{4}$ m			Y/N
7	Subtraction Make number sentences and stories to estimate and solve subtraction problems 0-100 or more Use mental arithmetic to solve simple addition and subtraction sums 0-100 or more			Y/N
8	Weight Estimate, measure and record weight using a scale balance Solve simple weight problems using 1kg, $\frac{1}{2}$ kg $\frac{1}{4}$ kg			Y/N
9	Capacity Solve simple capacity problems			Y/N

A = Achieved learning objectives for this week

P = partly achieved or achieved some of the learning objectives for the week

N = Not done, child did not follow this week's work

ASSESSMENT

Elementary 2 Term 4 Assessment Record

Year: Class: E2, Mathematics Assessment Record,
Child's Name:

Wk	Term 4	Notes –	A, P, N	Evidence
1	Orientation			
2	Time Read day, date, month and year. Record how long daily events last e.g. hours of darkness, morning lessons.			
3	Time Understand “quarter past” and “quarter to”			
4	Subtraction Subtract sets of objects and numbers 0-100			
5	Addition Do repeated addition for number 100 Read and use +, - and = sign			
6	Representing and interpreting data Select and sort real objects by three features e.g. shape, colour and size.			
7	Representing and interpreting data Make, read and interpret simple pictorial graphs			
8	Extending and Using Patterns Recognize and use number patterns in addition and subtraction from 0-100			
9	Extending and Using Patterns Work out missing numbers from longer patterns e.g. 3, 8, 13, ... or $B-X=10$			

A = Achieved learning objectives for this week

P = partly achieved or achieved some of the learning objectives for the week

N = Not done, child did not follow this week's work

ASSESSMENT

Reporting Sample

You may photocopy and use for each student in your class.

Name of school:.....

Class Teacher:.....

Student Name:Male/female.....

Year: Class: E2.....

Rating of Assessment Tasks KEY: A- Excellent. B - Good ,C -partly achieved											
Strand1: Number and Operation											
Counting	A,B,C	Comparing and ordering	A,B,C	Place value	A,B,C	Addition	A,B,C	Subtraction	A,B,C	Fractions	A,B,C
Count 0 to 99 sets of objects		Compare and use terms less than or more than in sets of numbers 0 to 99		Show base 10 materials from numbers 0 to 100		Add 2 digit objects up to 100	A	Subtract 2 digit objects up		Tell half of objects in numbers and shapes e.g. half of 10 is 5, half of coconut	A
Read number names from 0 to 99	B	Order number sets from 0 to 99	A	Write numbers in hundredths, tens and units	A	do repeated additions	C	Solve simple subtraction problems	C	Tell quarter of objects in numbers and shapes	B
Write number scripts 0 to 99	A		A		C	Solve simple addition problems	B	Write number sentences for subtraction	B	Show half and quarter of number sets and shapes of objects	
Count in groups of 2,5, & 10	A						B		C		
	A					Write number sentences for addition					

Strand 2: Quantities and Measurement

Length		Weight		Capacity		Time		Money			
Measure length using the meter ruler a standard units		Record weight of objects in $\frac{1}{2}$ kg, $\frac{1}{4}$ kg and 1 kg and 2 kg		Use measuring containers to fill containers from small to biggest		Describe the season of events					

ASSESSMENT

Measure height using the meter ruler a standard units		Record how many $\frac{1}{2}$ kg will make 1 kg and $\frac{1}{4}$ kg will make 1 kg.		measure Record the measurement in litres, $\frac{1}{2}$ L, $\frac{1}{4}$ L,		Tell the days and months of the year					
Measure width of objects using string and meter ruler						Read the calendar in days, months and year					
Read $\frac{1}{2}$ m, $\frac{1}{4}$ m, and 1m in height, length and width and record						Read the time on the clock face in hours and minutes					
						Read the clock face for half hour and quarter to and quarter past					

Strand 3: Geometrical Figures

Plane shapes (2D shapes)	A,B,C	Angles and directions	A,B,C	Solids (3D shapes)	A,B,C	Symmetry	A,B,C		
Group similar shapes and name them		Follow simple instructions to move forward and backwards, to left and right		Identify solids and describe them					
Match triangles, squares and circles				Group similar solids					
Tell their differences									

Strand 4: Data and Mathematical Relations

Exploring multiplication table	ABC		ABC
Extending and Using Patterns		Representing and interpreting data	
Make patterns using colour and shape		Collect objects from the local environment and sort them into two groups using their own criteria e.g. colour and shapes	
Arrange numbers in different ways to form a pattern		Sort numbers according to criteria given by the teacher e.g. even and odd, more or less than 10,	
Do odd number pattern		Explain their favourite food etc	
Do even number pattern			

ASSESSMENT

TeachersComments:.....
.....
.....

Signatures:

Student:.....TeacherDate:.....

Parent/ Guardian Comments.....
.....

Signatures:

Student:..... Parent/ Guardian

Date:...../...../.....

Note: Parent/ Guardian bring original to class teacher and gets head teacher to sign and stamp.
Compile and pass copies; to Parent/ Guardian, and Elementary 1 teacher for records of the student's
progress in the next year of learning for a student

Head Teacher signatures.....School Stamp



GLOSSARY

Meanings of terms used for teacher to read, understand and use in teaching mathematics lessons

Term	Meaning
Addition	As in putting together or putting on of objects etc.
Area	Part or measurement of surface enclosed within a boundary, or extent of the surface of all or part of a solid. <i>E.g.</i> a piece of land for the school called the school area or boundary
Capacity	The quality or amount a container can hold and contain
Circle	A ring all around with same measurement of radius from the centre/mid-point
Cone	Pointed object with round base. <i>E.g.</i> ice-cream
Currency	Money used by the country to buy and sell. For example, Papua New Guinea coins and paper money in Toeas and Kinas to buy and sell
Data	Collection of objects or numbers that give information about population etc. <i>for example</i> , number of students in a school.
Deci	Refers to tenth as large. For example, a decilitre is one tenth of a litre.
Digit	Any single number from 0 to 9. <i>For example</i> number 10 has two digits
Dimensional shapes	Shapes that have height and length (2D shapes) and height, length and width (3D shapes)
Division	Grouping objects and symbols into groups or numbers
Estimate	Make guesses, predictions and calculations with appropriate judgement to solve problems
Geometric shapes	Patterns of shapes such as oblongs, triangles and squares formed by joining straight lines and with corners.
Geometry	Study of angles and shapes that are formed by relating to lines, surfaces and solids such as triangles, cubes and circles
hour	Time measurement for hours or duration of time
Informal units	Non- standard units as arm spans, paces, sticks, ropes used for measuring in the daily activities of different communities e.g. using leg space to measure the length of a house.
Interpret	To work out and say in own words, the meaning and understanding of pictures and symbols.
Minute	Clock face or time measurement operation shown by the long hand showing 60 minute cycle for hourly routine that is 60 minutes per hour.
Multiplication	a mathematical operation which has a x symbol, that can be shown by adding integers repeatedly
Pattern	Repeated designs etc. as in for example weaving a basket or billum
Rectangle	Four (4) straight sided figures with lines that meet at 90 degree angles and with 2 opposite sides equal.
Sphere	An object similar to ball, round solid figure, three- dimensional surface that has distance from all points to the centre point. <i>E.g.</i> globe or earth
Seconds	Time in 1 minute that is 60 seconds per minute
Sorting	Classification or grouping into sets or subsets according to feature of objects or number groups e.g. 10 in 1 set
Subtraction	As in taking away or decreasing an object or symbol
Triangle	Three (3) straight sided figure with 2 lines that meet at 90 degree angle

RESOURCES AND MATERIALS

These resources should be collected prepared and stored in the classroom for use in lessons

Resources

- Flash cards for days of the week,
- Months and Dates
- Measures for 1kg, $\frac{1}{2}$ kg, $\frac{1}{4}$ kg, $\frac{1}{2}$ L, $\frac{1}{4}$ L
- Clock, clock faces,
- Calendars
- Mugs, cups pots, pans buckets
- Rice, seeds, shells, stones
- Empty packets of food
- Empty drink bottles, cans,
- banknotes, coins,
- beam balance, meter ruler, tape measure, String or rope

Songs

Sample Songs can be used during activities for motivation or in reference to lessons

Mathematical Songs that can be used during lessons.

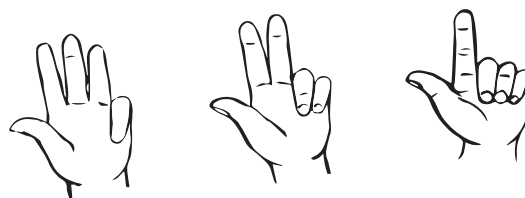
10 Ripe pawpaws

10 ripe pawpaws hanging on the tree,
10 ripe pawpaws hanging on the tree,
1 ripe pawpaw has accidentally fallen,
9 ripe pawpaws hanging on the tree
(Continue this song to no ripe pawpaw hanging on the tree)



One little, two little fingers...

One little, two little fingers, three little fingers,
Four little, Five little fingers, six little fingers,
Seven little, eight little fingers, nine little fingers,
I have 10 little fingers on my hands



I hear some toes dropping (Tune: Hear the toes dropping)

I hear some toes dropping, listen while they drop
Every coin is different in size, shape and number
Dropping. dropping, dropping,
Hear the sounds they make
Every coin is different in size, shape and number

RESOURCES AND MATERIALS

Ten green bottles

10 green bottles hanging on the wall
10 green bottles hanging on the wall
And if one green bottle should accidentally fall
There'll be 9 green bottles hanging on the wall
(Continue this song to no green bottles hanging on the wall)

I have some coins

I have some toeas In my pocket, In my pocket. In my pocket
I have some toeas they count up to one Kina
(Continue with toeas in my billum and toeas in my wallet)



There were 10 in the bed

There were 10 in the bed and the little one said
Roll over, roll over.
So they all rolled over and one fell out
There were 9 in the bed and the little one said,
Roll over, roll over
(Continue this song to no children in the bed)

This is the way I brush my teeth

This is the way I brush my teeth, brush my teeth, brush my teeth, (with all children and teacher doing the action, miming brushing teeth)
This is the way I brush my teeth, brush my teeth in the morning,
This is the way I walk to school, walk to school, walk to school (all miming walking)
This is the way I walk to school, walk to school in the morning.
Repeat with different activities and actions.

On my way to school today I met a little friend

On my way to school today I met a little friend ,
we hold our hands together and we walk to school
(children hold hands in a circle and sing the song while walking around in circles)
On my way to school today I met a little friend ,
we hold our hands together and we skip to school
(children hold hands in a circle and sing the song while skipping around in circles)
(Repeat with other actions)



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