



Scholars  
Program



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## SAMPLE LESSON: MATHEMATICS

Class: Form 1

**Title of Module:** Numbers, Fundamental Operations and  
Relationship in the set of Numbers

**Title of Chapter:** Arithmetic Processes

**Title of Lesson:** Proportions, Coefficient of Proportionality.

**Duration of Lesson:** *55 minutes*

**Name of Author:** Tsapla



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**NAME OF SCHOOL:** \_\_\_\_\_

**CLASS:** Form 1      **Enrolment: Boys;** \_\_\_\_\_, **Girls:** \_\_\_\_\_ **Total :** \_\_\_\_\_ : **Average Age:** \_\_\_\_\_

**DATE:** \_\_\_\_\_ **Term:** \_\_\_\_\_

**DURATION:** 55 minutes

**MODULE:1;** Numbers, Fundamental Operations and Relationships in the set of numbers

**TOPIC:** Arithmetic Processes

**LESSON:** Proportions, Coefficient of Proportionality.

**RATIONALE:** Good knowledge of Proportions facilitates the sharing and comparing of quantities of items.

**OBJECTIVES:** At the end of this lesson, students should be able to;

- ✓ **Distinguish between direct and indirect proportions.**
- ✓ **Determine the numerical value of a given quantity from another quantity.**

**PREREQUISITE KNOWLEDGE:** - Multiplication and division in  $\mathbb{N}$ , the set of natural numbers.

- Simplification of fractions

**DIDACTICS MATERIALS;**

**REFERENCES:**

1. August 2014 Mathematicsteaching syllabus Form 1 and Form 2. Ministry of Secondary Education, Cameroon;
2. Mastering Mathematics, (1<sup>st</sup> edition) Cambridge university press. Andrew T. Tamambang (2007) and AL form 1.;
3. Effective mathematics book 2 ANUCAM



Stages/Duration	Teaching / Learning Activities	Teacher's Activities	Learners' Activities	Teaching / Learning Points	Observations
<b>Introduction (10mins)</b>	<p><b>Verification of Pre-requisite ;</b></p> <p>1) Fill in the boxes with the correct values: a) <math>\frac{2}{3} = \frac{\quad}{9}</math>    b) <math>\frac{\quad}{5} = \frac{16}{20}</math></p> <p>2) Simplify the following fractions: a) <math>\frac{10}{12}</math>;    b) <math>\frac{25}{20}</math>;    c) <math>\frac{100}{750}</math></p> <p><b>PROBLEM SITUATION;</b></p> <p>Mr. Mballa owns a bookshop. He was given 500000frs to supply Mathematics workbooks to a secondary school. Each workbook costs 2500frs, what will be the exact number of workbooks he will supply for the 500000frs?</p>	<p>Teacher tests students' knowledge;</p> <p>Copies questions on board and asks students to discuss and make proposals.</p> <p>Presents the problem to the learners</p>	<p>- Students are sent to the board while others work in their exercise books and share with peers.</p> <p>Learners get to understand the idea and problem</p>	<p>Understanding of equivalent fractions and simplification of fractions</p> <p>Places learners in awareness and interest aroused.</p> <p>Some may even start proposing answers which may be noted for later analysis</p>	<p>Allow some students to propose answers.</p> <p>Note their answers somewhere and make you come back to them late in the lesson</p>
<b>Lesson Development (20mins)</b>	<p><b>Activity</b></p> <p>1) The cost of a pen in a shop is 200frs. Ondoua and his friend Paul entered the shop, Ondoua bought 10pens while Paul spent 1600frs in buying his? a) How much did Ondoua spend? b) How many pens did Paul buy?</p> <p>2) Four men dug a well in 6 days. How long will it take two men to dig a similar well, working at the same pace?</p>	<p>Teacher moves round the class to observe and assist students doing the activity.</p> <p>Teacher later ask groups to present their works on the</p>	<p>Students discuss and do the activity individually and in groups, while two</p> <p>Students discuss and do the activity individually and</p>	<p>A <b>proportion</b> is a way of comparing two or more quantities of different kinds.</p> <p><b>SOLUTION;</b></p> <p>1a) 1pen = 200frs 10pens = <math>10 \times 200\text{frs} = 2000\text{frs}</math> <math>\therefore</math> Ondoua spent 2000frs</p> <p>b) Paul spent 1600frs <math>1600 \div 200 = 8\text{pens}</math></p> <p>The amount spent increases with</p>	<p>Allow students to use their own words to explain the relation.</p> <p>Correct their language and give them the Mathematical terminologies where need be.</p>



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	<p>The 1st activity, we have direct proportion (the more the pens, the higher the cost incurred).</p> <p>In the 2<sup>nd</sup> activity, we have indirect proportion or inverse</p>	<p>chalkboard.</p> <p>Teacher corrects the activity.</p> <p>Writes what students are to copy on the board.</p>	<p>in groups, while two</p> <p>The rest of the class observes and appreciate the work.</p>	<p>the increase number of pens bought.</p> <p>2) 4men took 6days, 2men will take;</p> $\frac{4men \times 6days}{2men} = 12 \text{ days}$	<p>proportion. (the fewer the men, the more days).</p>																								
<p>Exercise of Application (15minutes)</p>	<p>1. Complete the table below</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Quantity 1</th> <th>Quantity 2</th> <th>Type of proportion</th> </tr> </thead> <tbody> <tr> <td>The distance traveled by a car</td> <td>Litres of fuel used</td> <td></td> </tr> <tr> <td>Number of women to work on a farm</td> <td>Time taken to do the work</td> <td></td> </tr> <tr> <td>The cost of an article</td> <td>The amount use in buying</td> <td></td> </tr> </tbody> </table> <p>2) 4 students take 12minues to sweep a classroom. Given that they all sleep at the</p>	Quantity 1	Quantity 2	Type of proportion	The distance traveled by a car	Litres of fuel used		Number of women to work on a farm	Time taken to do the work		The cost of an article	The amount use in buying		<p>Teacher copies exercise on board</p> <p>Teacher corrects students' work</p>	<p>Students attempt the given exercise after sharing with peers</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Qty 1</th> <th>Qty 2</th> <th>Type of proportion</th> </tr> </thead> <tbody> <tr> <td>The distance traveled by a car</td> <td>Litres of fuel used</td> <td><b>Direct</b></td> </tr> <tr> <td>N<sup>o</sup> of women required</td> <td>Time taken to do the work</td> <td><b>Indirect or Inverse</b></td> </tr> <tr> <td>The cost of an article</td> <td>The amt used in buying</td> <td><b>Direct</b></td> </tr> </tbody> </table> <p>Completed Table.</p> <p><b>Solution</b></p>	Qty 1	Qty 2	Type of proportion	The distance traveled by a car	Litres of fuel used	<b>Direct</b>	N <sup>o</sup> of women required	Time taken to do the work	<b>Indirect or Inverse</b>	The cost of an article	The amt used in buying	<b>Direct</b>	
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	<p>same speed,</p> <p>a) How long will it take 6 students to sweep a similar classroom?</p> <p>b) How many students will be needed to sweep a similar classroom in 24minutes?</p> <p>3) Tazoh buys 5bags of garri for 20000frs. How much will his neighbor, Ngu spend if he needs 4bags of garri?</p> <p><b>Solution To The Problem Situation;</b> Mr Mballa will supply exactly, 2,500frs = 1 wkbk <math>\therefore 500,000 = \frac{500000frs \times 1workbook}{2500frs}</math> <math>= 200workbooks</math></p>			<p>2)a) 4 students take 12mins 1 student takes 12 x 4 mins 6 students will take: <math>\frac{12 \times 4}{6} = 8minutes.</math></p> <p>b) 12 mins by 4 students 1 minute by <math>\frac{4}{12}</math> 24 mins by <math>\frac{4 \times 24}{12}</math> <math>= 8</math> students</p> <p>3) 5 bags cost 20,000frs. 1bag will cost <math>\frac{20000}{5}</math> frs. 4bags will cost <math>\frac{20000 \times 4}{5}</math> <math>= 16,000frs</math></p>	
Conclusion and Homework	<p>1. Mr Fru mixes 4kg of flour with 12 eggs to make enough cake for 8 people. If 12 people are visiting him, what proportion of flour and eggs will he mix to make enough cake for them such that each person has the same quantity of cake as the first 8?</p> <p>2. A farmer uses 2bags of fertilizer for a farm of 3hectares.</p>	Writes homework on the board.	Copy the homework in their exercise	<p><b>Solution</b></p> <p><math>\frac{12 \times 12}{8}</math> eggs;</p>	



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	<p>a) How many bags will be used for a farm of 9hectares?</p> <p>b) How many hectares of farmland is required for 4bags of fertilizer?</p> <p>3. A student spends 20% of his monthly pocket allowance each week of 6 days. Given that his pocket allowance is 3000 frs,</p> <p>a) What percentage would he have consumed in three weeks?</p> <p>b) How much is he left with at the end of the 3<sup>rd</sup> week?</p>		<p>books to be done at home.</p>	$\frac{4 \times 12}{8}$ kg of flour	



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