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| **THEME:** | Direct and Inverse Proportion |
| **DATE**: | 23 – 09 – 2024 |
| **CLASS**: | Js 3 |
| **TIME**: | 8:40-09:20am |
| **DURATION** | 40 MINUTES |
| **SUBJECT**: | Mathematics |
| **UNIT TOPIC:** | Direct Proportion |
| **LESSON TOPIC:** | Direct proportion: meaning and calculations |

**SPECIFIC OBJECTIVE**: By the end of the lesson, students should be able to

1. Define direct proportion.
2. Solve problems on direct proportions
3. Apply direct proportion to practical problems

**INSTRUCTIONAL RESOURCES:**  Direct proportion Chart and Graphs

**LESSON PRESENTATION**

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| **STEP 1** | **PREVIOUS KNOWLEDGE:** students were taught the meaning of binary and also addition, subtraction , division and multiplication of numbers in binary. | | Students recall. |
| **STEP 2** | **EXPLORATION:**  The teacher introduces the topic with the following questions:   1. What is direct proportion? 2. If you use 10g of flour to make 2 cup cakes how many grams of flour can be used to make 8 cup cakes? | | Students make attempt to answer the questions. |
| **STEP 3**  **Objective 1;**  **Objective 2;**  **Objective 3;** | **DISCUSSION:**  ***Teacher starts the discussion:***  In maths, we say that two quantities are proportional if as one changes, the other changes in a specific way. There are two types of proportionality that you need to be familiar with, direct and inverse proportion.  **Direct proportion or direct variation** is the relationship between two quantities where the ratio of the two is equal to a constant value. It is represented by the **proportional symbol, ∝.**  **Example: 1**  y is **directly proportional** to x. When y = 24, x = 8  Work out the value of y when x = 2  **Step 1:** We have that y is directly proportional to x, i.e. **y∝x**.  Then, expressing this as an equation we get **y = kx**  **Step 2:** In the question we were given that when y = 24, x = 8. Substituting these into the equation above, we get  24=8×k  k =24÷8 =3  Thus, the proportionality equation becomes, y = 3x  Step 3: We can now use this to work out that when x =2,  y=3×2=6    **The scale of a map is given as**1:20000000**. Two cities are**4cm**apart on the map. Find the actual distance between them.**  **Solution**: Map distance is 4 cm.  Let the actual distance be x cm, then 1:20000000 = 4:x.  1/20000000 = 4/x  ⇒ x = 80000000 cm = 800 km | | Students listen attentively and take down notes. |
| **STEP 4** | **APPLICATION:**  If two books costs 150 naira, how many books can you buy with 900 naira?  **Solution**  The number of books is directly proportional to the cost.  If 2 books cost ₦150,  1 book = = ₦75.  ₦900 will buy = 12 books. | | Students ask questions on the topic which the teacher answers. |
| **STEP 5** | **EVALUATION:** the teacher evaluates the students with the following questions:   1. What is direct proportion? 2. x is directly proportional to y.  When x = 2,  y=8.    a)  Write an equation connecting x and y   b)  Calculate the value of x when y is 32   c) Calculate the value of y when x is 50 | | The students answer the questions. |
| **Assignment**  **References**  **New concept mathematics for Jss3 by A. A. Arigbabu et al.**  **New general mathematics for Jss3 by M/ F. Macrae et al.** | |  |