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P.7 MATHEMATICS

LESSON ONE WEEK EIGHT
TOPIC: **FRACTIONS**
SUB TOPIC: **FINDING THE REMAINING PERCENTAGES PARTS**
Examples:
1. If 40% of a class is absent, what percentage is present?
   What percentage is a present?
   Those absent = 40%
   Those present   = 100% - 40%
                                =   60%
2. 35% of the pupils in a school like rice while 10% like potatoes. If the rest like posho, find percentage of the pupils like posho?
   Percentage for rice and potatoes   = 35% + 10%
                                                          =   45%
   Percentage for posho   =   100% - 45%
                                =   55%

ACTIVITY
1. If 45% of a class is absent, what percentage is present?
2. If 60% of the people at a party are females, what percentage is for the males?
3. 65% of the candidates passed in division one, what percentage of the candidates did not pass in division one?
4. 45% of the people in a home like rice while 15% like matoke. If the rest like Irish, find the percentage of people who like Irish?
5. 55% of the pupils in a school like games while 25% like sports. If the rest like music, find percentage of the pupils like music?

TOPIC: **FRACTIONS**
SUB TOPIC: **EXPRESSING QUANTITIES AND PERCENTAGES:**
Examples:
1. Write 20 as a percentage of 80.
   Fraction = $\dfrac{20}{80}$

   $= \dfrac{\overset{1}{\cancel{20}}}{\underset{4}{\cancel{80}}} \times \overset{25}{\cancel{100}}\%$

   =   25%

2.	Amos got 12 out of 25 in a Maths test. Express his mark as a percent.

Fraction	=	$\dfrac{12}{25}$

Percentage	=	$\dfrac{12}{\underset{1}{\cancel{25}}} \times \overset{4}{\cancel{100}}\%$

	=	12 x 4%

	**=	48%**

ACTIVITY:
1.	Write 30 as a percentage of 50?
2.	Write 15 as a percentage of 60?
3.	Agnes got 20 out of 25 in an English test. Express her mark as a percent.
4.	30 out of 40 pupils in a class are girls. Express the number of girls as a percent.
5.	Abbas answered 18 out of 25 questions in a Maths test. Express the number of questions he answered as a percent.

**SUB TOPIC:	PERCENTAGES**
**CONTENT:	APPLICATION OF PERCENTAGES**
Examples:
1.	In a class, there are 40% more boys than girls. If there are 60 girls in the class, how many pupils are in the class?

Let the % age of girls be m.
Girls = m%
Boys = m + 40%
m + m + 40 = 100
	2m + 40 = 100
2m + 40 − 40 = 100 − 40
	2m		= 60
	$\dfrac{\cancel{2}m}{\cancel{2}}$		$= \dfrac{\overset{30}{\cancel{60}}}{\cancel{2}}$
	**m		= 30%**
30% gives   60
1% gives $\dfrac{60}{30}$
100% gives $\dfrac{\overset{2}{\cancel{60}}}{\underset{1}{\cancel{30}}} \times 100)$
	= 2 x 100
	= 200 pupils

2. Nanyonjo earns shs 12,000. She spends 75% and saves the rest.
   (i) How much does she spend?
     Solution:
     = 75% of sh. 12,000
     = $\frac{75}{100}$ x 12,000
     = 75 x 120
     = Sh. 9,000
   (ii) How much does she save?
     (100% - 75%) of 12,000   Or   sh. 12,000
     = 25% of 12,000   sh. - 9,000
     = $\frac{25}{100}$ x sh. 12000   **sh. 3,000**
     = 25 x sh. 120
     = sh. 3000

ACTIVITY:
1. If 60% of my salary is spent on food and I save Sh. 60,000. What is my salary?
2. If 20% of my salary is saved on food and I spend the rest which is Sh. 240,000. What is my salary?
3. In a class, there are 20% more girls than boys. If there are 60 boys in the class, how many pupils are in the class?
4. Namuli earns Sh. 320,000. She spends 75% and saves the rest.
    a) How much does she spend?
    b) How much does she save?

SUB TOPIC: PERCENTAGE INCREASE
EXAMPLES:
1. Increase 800 by 20%
   New amount: = 100% + 20% of old amount
               = 120% x Sh. 800
               = $\frac{120}{100}$ x Sh. 800
               = 960

2. Increase 800 pupils by 12 ½ %
   New number = 100% + 12 ½ % of old number $= \frac{225}{2_1}$ x $\frac{1}{100}$ x $\frac{\overset{4}{\cancel{800}}}{1}$
            = 112 ½ % of 800 pupils
            = 225% x 800 pupils   = (225 x 4) pupils
            $= \left(\frac{\overset{2}{225}}{2} \div \frac{100}{1}\right)$ x $\frac{800}{1}$ **= 900 pupils**

3.   Increase Sh. 4800 by 10% and then by 20%
     Old amount   =   Sh. 4800
     10% increment =   100% + 10% = 110%
     20% increment =   100% + 20% = 120%
                     = 110% x 120% of Sh. 4800
                     = 110 x 120 x 4800
                        100   100
                     = 11 x 12 x 48

     New amount   = Sh. 6336

ACTIVITY
1.   Increase 200 by 20%
2.   Increase 400 pupils by 12 ½ %
3.   Increase 600 pupils by 33 $\frac{1}{3}$ %
4.   Increase Sh. 800 by 20% and then by 30%
5.   Increase Sh. 5000 by 10% and then by 20%

SUB TOPIC: PERCENTAGE DESCREASE
EXAMPLES:

1.   Decrease Sh. 1500 by 10%
         New amount   = (100% - 10%) of Sh. 1500
                       = 90% of Sh. 1500
                       = 90 x Sh. 1500
                          100
                       = 90 x Sh. 15
                       = Sh. 1350

2.   Decrease Sh. 12,000 by 15% and then by 20%.
         Old amount   =   Sh. 12,000
         10% decrease =   100% - 10% = 90%
         20% decrease =   100% - 20% = 80%
                       =   90% x 80% of Sh. 12,000
                       =   90 x 80 x Sh.12, 000
                             100   100
                       =   90 x 8 x Sh. 12

New amount   = Sh. 8,640

3.   Decrease 720 dollars by 33 $^1/_3$%

   New percentage = 100% - 33 $^1/_3$%

   = 66 $^2/_3$%

   New amount   = 66 $^2/_3$% of 720 dollars

   = $\underline{200}$% of 720 dollars
       3

   = $\left(\dfrac{200}{3} \div \dfrac{100}{1}\right)$ x $\dfrac{720}{1}$ dollars

   = $\dfrac{200}{3_1}$ x $\dfrac{1}{100}$ x $\dfrac{\overset{240}{\cancel{720}}}{1}$ dollars

   = 2 x 240 dollars

   = 480 dollars

EVALUATION ACTIVITY:
1.   Decrease Sh. 3000 by 20%
2.   Decrease 1440 dollars by 33 $^1/_3$%
3.   Decrease 2000 dollars by 12 $^1/_2$%
4.   Decrease Sh. 2,500 by 10% and then by 20%
5.   Decrease Sh. 1,600 by 30% and then by 10%