

P.4 MATHEMATICS LESSON NOTES FOR *TERM II*

| Date | Time | No. of pupils |
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TOPIC : **Fractions**

SUB TOPIC : **Types of fractions**

COMPETENCES : **The learner**

Language :

- Reads, pronounces, spells and describes key words used in the sentences
- Proper, improper, fraction, numerator, denominator

Subject :

- Describes a fraction
- States the types of fractions
- Illustrates the types of fractions

Methods :

- **Demonstration: Guided discovery**

Introduction :

- Through oral discussion of fractions, the teacher will introduce the lesson to the learners.

CONTENT

Fractions

A fraction is a part of a whole

NB: In a fraction like $\frac{3}{5}$

The upper number (3) is called the numerator.

The lower number (5) is the denominator.

Identifies the types and parts of fractions.

Types of fractions

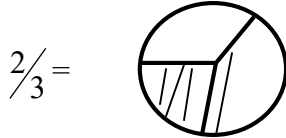
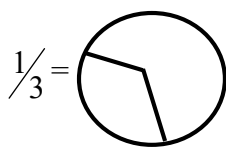
- a) Proper fractions – The numerator is less than the denominator eg. $\frac{3}{4}$

$$\boxed{\text{a whole}} = \frac{3}{4}$$

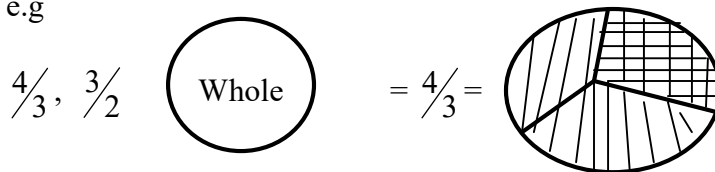
Parts to shade

Total parts





- b) Improper fraction : The top number (numerator) is more than the denominator.
e.g



N.B: Mixed numbers – have a whole and a proper fraction e.g $1\frac{1}{2}, 2\frac{1}{4}, 3\frac{1}{3}$ Fraction
Whole



Activity

1. Name any two types of fractions
2. Give 3 examples of
 - a. Proper fractions
 - b. Improper fractions
3. Write improper or proper fraction
 - a. $\frac{2}{5}$
 - b. $\frac{6}{5}$
4. Write proper or improper fraction besides each fraction
 - a. $\frac{2}{3}$
 - b. $\frac{3}{4}$
 - b. $\frac{1}{3}$
 - d. $\frac{4}{3}$

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TOPIC : Converting mixed numbers to improper fractions

COMPETENCES : The learner;

Language : Reads, spells, pronounces and describes new words as: whole, numerator, denominator, improper.

Subject :

- Identifies each type of fractions
- Converts mixed numbers to improper fractions

Methods :

- Observation guided discovery

Introduction :

The teacher will introduce the lesson through review of the previous lesson.

CONTENT

Converting mixed numbers to improper fractions.

Example 1

Change $3 \frac{2}{5}$ to improper fraction

$$\frac{(D \times W) + N}{D} = \quad W = \text{Whole}$$

D = Denominator

N = Numerator

$$\begin{aligned} 3 \frac{2}{5} &= \left(\frac{(3 \times 5) + 2}{5} \right) \\ &= \frac{15 + 2}{5} \\ &= \frac{17}{5} \end{aligned}$$

Converting improper fractions to mixed numbers

Example II

Express $\frac{5}{2}$ as a mixed number.

Method 1

$$\begin{aligned} \frac{5}{2} &= \text{Two circles, each with two vertical lines, and one vertical line outside} \\ &= 2 \text{ r } 1 \\ &= 2 \frac{1}{2} \end{aligned}$$

Method 2

$$\begin{aligned} &2 \text{ r } 1 \\ \frac{5}{2} &= 2 \overline{)5} \\ 2 \times 2 &= \frac{4}{1} \\ \frac{5}{2} &= 2 \frac{1}{2} \end{aligned}$$

Activity

1. Convert the following fractions to improper

a. $3 \frac{1}{5}$

b) $4 \frac{1}{2}$

c) $9 \frac{1}{4}$

d) $12 \frac{1}{4}$

2. Change the following improper fractions to mixed numbers.

a. $\frac{4}{3}$

b) $\frac{9}{5}$

c) $\frac{13}{7}$

d) $\frac{21}{4}$

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TOPIC : Converting mixed numbers to improper fractions

SUB TOPIC : Finding Equivalent fractions

COMPETENCES : The learner;

Language : Reads, spells, pronounces and describes new words (equivalent, counting numbers)

Subject :

- Describes an equivalent fraction
- Identifies counting or natural numbers
- Finds equivalent fractions

Methods :

- Observation, questions and answer techniques

Introduction : Through question and answer approach, the teacher will introduce the lesson.

CONTENT :

Finding equivalent fractions

Note:

- Equivalent fractions have the same value
- Equivalent fractions are got by multiplying a numerator and denominator by the same counting numbers (1, 2, 3, 4)

Example 1

Find the equivalent fractions for

a) $\frac{2}{3}$

$$\frac{2}{3} = \frac{2 \times 2}{3 \times 2} = \frac{2 \times 3}{3 \times 3} = \frac{2 \times 4}{3 \times 4}$$

$$\frac{2}{3} = \frac{4}{6} = \frac{6}{9} = \frac{8}{12}$$

Finding missing numbers in equivalent fractions

Example 1

$$\frac{1}{2} = \frac{\square}{6}$$

$$\frac{1}{2} = \frac{1 \times 2}{2 \times 2} = \frac{1 \times 3}{2 \times 3} = \frac{1 \times 4}{2 \times 4} = \frac{1 \times 5}{2 \times 5}$$

$$\frac{1}{2} = \frac{2}{4} = \frac{\boxed{3}}{6} = \frac{4}{8} = \frac{5}{10}$$

$$\underline{\underline{\frac{1}{2} = \frac{\boxed{3}}{6}}}$$

Activity

1. Find the next three equivalent fractions for the following fractions:-

a. $\frac{2}{5}$ b. $\frac{1}{4}$ c. $\frac{2}{7}$

2. Find the missing numbers in the following;

a. $\frac{2}{3} = \frac{\square}{15}$ b) $\frac{1}{4} = \frac{\square}{12}$

3. Fill in the missing numbers

a. $\frac{3}{4} = \frac{15}{\square}$ b) $\frac{5}{12} = \frac{15}{\square}$

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TOPIC : **Fractions**

SUB TOPIC : **Reducing fractions**

COMPETENCES : **The learner;**

Language :

- Identifies the meaning of the term reducing fractions

Subject :

- Works out the numbers involving reducing fractions

Methods :

- **Guided discovery, Question and answer technique.**

Introduction :

- **The teacher will introduce the lesson through review of the previous work.**

CONTENT :

Reducing fractions

This refers to finding a lower equivalent fraction by dividing the numerator and denominator with the same number (2, 3, 4, 5, 6, 7, 8, 9) etc.

Example

Reduce $\frac{5}{10}$ to its lowest terms

$$\frac{5}{10} = \frac{5 \div 5}{10 \div 5} = \frac{1}{2}$$

$$\frac{3}{15} = \frac{1}{5}$$

Activity

Reduce the following fractions to their lowest terms.

a) $\frac{9}{15}$

b) $\frac{3}{6}$

c) $\frac{2}{10}$

d) $\frac{5}{20}$

Find the next two equivalent fraction of

a) $\frac{1}{5}$

b) $\frac{2}{3}$

c) $\frac{4}{7}$

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TOPIC : Fractions

SUB TOPIC : Arranging fractions in order

COMPETENCES : The learner;

Language :

- Identifies the meaning of the common terms used to mean smallest and biggest. (Ascending / descending), least, greatest.

Subject :

- Lists the equivalent fractions
- Identifies the greatest and least values
- Arrange fractions in order

Methods :

- Guided discovery
- Whole class discussion
- Question and answer

Introduction :

- The teacher will introduce the lesson through mental work and review of the previous lesson/ work.

CONTENT :

Arranging fractions in order

Example:-

Arrange $\frac{1}{8}$, $\frac{1}{4}$ and $\frac{1}{5}$ in order starting with the smallest. (ascending)

Solution

$$\frac{1}{8} = \frac{2}{16} = \frac{3}{24} = \frac{4}{32} = \frac{5}{40} = \frac{6}{48} = \frac{7}{56}$$

$$\frac{1}{4} = \frac{2}{8} = \frac{3}{12} = \frac{4}{16} = \frac{5}{20} = \frac{6}{24} = \frac{7}{28} = \frac{8}{32} = \frac{9}{36} = \frac{10}{40}$$

$$\frac{1}{5} = \frac{2}{10} = \frac{3}{15} = \frac{4}{20} = \frac{5}{25} = \frac{6}{30} = \frac{7}{35} = \frac{8}{40}$$

\therefore Order from the smallest is $\frac{1}{8}$, $\frac{1}{5}$, $\frac{1}{4}$

N.B: A teacher uses a number line for those fractions with the same denominator.

Activity

Arrange the following from the smallest to the biggest(descending)

i) $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$

ii) $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{7}$

iii) $\frac{1}{3}$, $\frac{1}{8}$, $\frac{1}{5}$

iv) $\frac{1}{10}$, $\frac{1}{5}$, $\frac{1}{2}$

v) $\frac{1}{7}, \frac{1}{9}, \frac{1}{2}$

vi) $\frac{1}{3}, \frac{1}{8}, \frac{1}{4}$

vii) $\frac{1}{4}, \frac{1}{6}, \frac{1}{3}$

viii) $\frac{1}{3}, \frac{1}{9}, \frac{1}{12}$

ix) $\frac{1}{3}, \frac{1}{4}, \frac{1}{6}$

x) $\frac{1}{2}, \frac{1}{4}, \frac{1}{10}$

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TOPIC : Fractions

SUB TOPIC : Comparing

COMPETENCES : The learner;

Language :

- Identifies the meaning of the common terms used to mean smallest and biggest. (Ascending / descending), least, greatest.

Subject :

- Lists the equivalent fractions
- Identifies the greatest and least values
- Arrange fractions in order

Methods :

- Guided discovery
- Whole class discussion
- Question and answer

Meaning of symbols

- $>$ is greater than
- $<$ is less than
- $=$ equal to

Introduction :

- The teacher will introduce the lesson through mental work and review of the previous lesson/ work.

CONTENT :

Comparing fractions

Example:-

Compare $\frac{1}{2}$ and $\frac{1}{3}$ using $>$, $<$ or $=$

Solution: $\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8}$

$\frac{1}{3} = \frac{2}{6} = \frac{3}{9} = \frac{4}{12}$

$$\therefore \frac{1}{2} - \frac{1}{3} = \frac{3}{6} - \frac{2}{6}$$

$$= \frac{1}{2} > \frac{1}{3}$$

Activity

1. Compare the following fractions using $>$, $<$ or $=$

i) $\frac{1}{3} - \frac{1}{4}$

ii) $\frac{5}{6} - \frac{5}{8}$

iii) $\frac{1}{2} - \frac{1}{3}$

iv) $\frac{1}{2} - \frac{2}{12}$

v) $\frac{3}{4} - \frac{5}{6}$

vi) $\frac{1}{2} - \frac{4}{8}$

vii) $\frac{3}{12} - \frac{1}{4}$

viii) $\frac{2}{3} - \frac{1}{5}$

ix) $\frac{7}{8} - \frac{7}{9}$

x) $\frac{9}{11} - \frac{11}{22}$

2. Which fraction is bigger

$\frac{1}{2}$ or $\frac{1}{3}$

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TOPIC : Fractions

SUB TOPIC : Addition of fractions with the same denominator

COMPETENCES : The learner;

Language :

Subject :

- Works out problems involving addition of fractions.

Methods :

- Guided discovery
- Whole class discussion
- Brain storming

Introduction :

- Pupils will be introduced to a lesson through mental work and previous work review.

CONTENT :

Work out the following:-

1. Add : $\frac{1}{4} + \frac{2}{4}$

Solution

$$\begin{aligned}\frac{1}{4} + \frac{2}{4} &= \frac{1+2}{4} \\ &= \frac{3}{4} \\ &= 1 \frac{1}{3} + 4 \frac{1}{3} = 1 + 4 + \frac{1}{3} + \frac{1}{3} \\ &= 5 + \frac{1+1}{3} \\ &= 5 + \frac{2}{3} \\ &= 5 \frac{2}{3}\end{aligned}$$

Activity

Workout the following g:-

- | | |
|--------------------------------------|-------------------------------------|
| i) $3 \frac{1}{2} + 2 \frac{1}{2}$ | ii) $4 \frac{1}{3} + 3 \frac{1}{3}$ |
| iii) $5 \frac{1}{4} + 4 \frac{2}{4}$ | iv) $1 \frac{1}{5} + 3 \frac{2}{5}$ |
| v) $4 \frac{1}{5} + 3 \frac{2}{5}$ | vi) $5 \frac{1}{3} + 1 \frac{1}{3}$ |
| vii) $\frac{1}{2} + \frac{1}{2}$ | viii) $\frac{1}{4} + \frac{2}{4}$ |
| ix) $\frac{5}{10} + \frac{1}{10}$ | x) $\frac{1}{5} + \frac{1}{5}$ |

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TOPIC : **Fractions**

SUB TOPIC : **Subtraction of fractions**

COMPETENCES : **The learner;**

Language :

Subject :

- **Solves problems involving subtraction of fractions**

Methods :

- **Whole class discussion**

- **Guided discovery**

Introduction :

- Pupils will be introduced to the lesson through mental work and previous work review.

CONTENT :

Work out the following:-

$$\begin{aligned} 1. \text{ Subtract : } \frac{7}{12} - \frac{1}{12} &= \frac{7-1}{12} \\ &= \frac{6 \div 6}{12 \div 6} \\ &= \frac{1}{2} \end{aligned}$$

Examples 2

$$6 \frac{2}{4} - 2 \frac{1}{4}$$

Activity

Subtract the following

i) $\frac{2}{4} - \frac{1}{4}$

ii) $\frac{5}{7} - \frac{2}{7}$

iii) $\frac{5}{10} - \frac{3}{10}$

iv) $\frac{6}{10} - \frac{3}{10}$

v) $\frac{9}{11} - \frac{3}{11}$

vi) $\frac{6}{7} - \frac{1}{7}$

vii) $1\frac{1}{12} - \frac{3}{12}$

viii) $\frac{6}{14} - \frac{2}{14}$

ix) $4\frac{2}{5} - 1\frac{1}{5}$

x) $5\frac{3}{7} - 3\frac{1}{7}$

xi) $6\frac{3}{7} - 3\frac{1}{9}$

xii) $8\frac{5}{6} - 1\frac{4}{6}$

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TOPIC : Fractions

SUB TOPIC : Addition and subtraction of fractions with the different denominators

COMPETENCES : The learner;

Subject :

- Solves problems involving addition and subtraction of fractions

Methods :

- Whole class discussion
- Guided discovery
- Problem solving

Introduction :

- Pupils will be introduced to a lesson through mental and review of previous work

CONTENT :

Work out the following:-

Example 1

Add : $\frac{1}{2} + \frac{2}{3}$

$$1. \quad \frac{1}{2} = \frac{2}{4} = \left(\frac{3}{6}\right) = \frac{4}{8} = \frac{5}{10} = \frac{6}{12}$$

$$2. \quad \frac{2}{3} = \left(\frac{4}{6}\right) = \frac{6}{9} = \frac{8}{12} = \frac{10}{15}$$

$$\frac{1}{2} + \frac{2}{3} = \frac{3}{6} + \frac{4}{6}$$

$$= \frac{3+4}{6}$$

$$= \frac{7}{6}$$

$$= 1 \frac{1}{6}$$

Example 2

A. II) $\frac{3}{4} - \frac{2}{3}$

$$1. \quad \frac{3}{4} = \frac{6}{8} = \left(\frac{9}{12}\right) = \frac{12}{16}$$

$$\frac{2}{3} = \frac{4}{6} = \frac{8}{9} = \left(\frac{8}{12}\right) = \frac{10}{15}$$

$$\frac{3}{4} - \frac{2}{3} = \frac{9}{12} - \frac{8}{12}$$

$$\frac{9-8}{12}$$

$$= \frac{1}{12}$$

Activity :**Work out the following**

i) $\frac{1}{2} + \frac{2}{5}$

ii) $3\frac{1}{3} + 2\frac{1}{2}$

iii) $4\frac{1}{4} + 1\frac{1}{5}$

iv) $4\frac{1}{3} + 1\frac{3}{4}$

v) $\frac{1}{2} - \frac{1}{4}$

vi) $\frac{2}{3} - \frac{1}{4}$

Application of fractions

1. James dug $\frac{1}{3}$ of the garden on Monday and $\frac{1}{3}$ of it on Tuesday. What fraction of the garden did he dig in the two days?

$$\frac{1}{3} + \frac{1}{3} = \frac{1 \times 1}{3} = \frac{2}{3}$$

2. A cup is $\frac{2}{5}$ full of water. John added $\frac{1}{5}$ of the water to the cup. What fraction of the water is in the cup?

3. Kapere had $\frac{3}{7}$ of the mangoes. His mother gave him more $\frac{2}{7}$ of the mangoes. What fraction of the mangoes does he have?

4. Ojok had $\frac{5}{8}$ of the eggs. If $\frac{2}{8}$ of them got spoilt, what fraction of the eggs are good?

5. A cup is $\frac{7}{12}$ full of water, a father used $\frac{5}{12}$ of the water to take medicine. What fraction of the water remained in the cup?

6. A teacher has an orange she gave Opio a $\frac{1}{3}$ of the orange. What fraction remained?

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TOPIC : Fractions

SUB TOPIC : Expressing fractions as decimals

COMPETENCES : The learner;

Language :

- Reads, spells, pronounces and describes new words
- Decimals / decimal places / decimal point

- Subject :**
- Describes a decimal and decimal places
 - Works out problems on conversion of fractions in discussion.

Methods :

- Whole class discussion
- Guided discovery

Introduction :

- Pupils will be introduced to the lesson by reviewing the previous work and brainstorming about decimals.

CONTENT :

Express the following as decimals.

i) $\frac{3}{10} = 0.3$ ii) $\frac{24}{100} = 0.24$ iii) $2\frac{4}{10} = 2 + \frac{1}{2} = 2 + 0.4 = 2.4$ 2.0
0.4

Activity change the following to decimals

i) $\frac{3}{10}$ ii) $\frac{4}{10}$ iii) $\frac{5}{10}$ iv) $\frac{6}{10}$ v) $\frac{9}{10}$
vi) $\frac{14}{100}$ vii) $\frac{26}{100}$ viii) $\frac{64}{100}$ ix) $\frac{32}{100}$ x) $\frac{54}{100}$
xi) $2\frac{5}{10}$ xii) $3\frac{24}{100}$ xiii) $4\frac{16}{100}$ xiv) $5\frac{17}{100}$

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TOPIC : Fractions

SUB TOPIC : Writing decimals as common fractions

COMPETENCES : The learner;

Language :

- Reads, spells, pronounces and describes new words used, decimal places / decimals

Subject :

- Identifies decimal places
- Workout problems involving conversation of decimal to common fractions.

Methods :

- Whole class discussion
- Guided discovery

Introduction :

- Pupils will be introduced to the lesson by reviewing the previous work and brainstorming about decimals.

CONTENT :

- Pupils will be introduced to lesson by reviewing the previous work beefed up with mental work.

Writing decimals as common fractions

Workout the following as common fractions

$$\begin{aligned} \text{i) } 1.5 &= 1 + \frac{5}{10} \\ &= 1 \frac{5}{10} \end{aligned}$$

$$\begin{aligned} \text{ii) } 12.9 &= 12 + \frac{9}{10} \\ &= 12 + 0.9 \\ &= 12 \frac{9}{10} \end{aligned}$$

Activity

Express the following as Common fractions

- i) 2.5 ii) 12.5 iii) 5.6 iv) 13.5
v) 6.8 vi) 16.8 vii) 6.7 viii) 14.9

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TOPIC : Fractions

SUB TOPIC : Representing decimals on the number line.

COMPETENCES : The learner;

Language :

- Reads, spells, pronounces and describes key words on number line

Subject :

- Draws a number line of decimals
- Marks decimals on a number line

Methods :

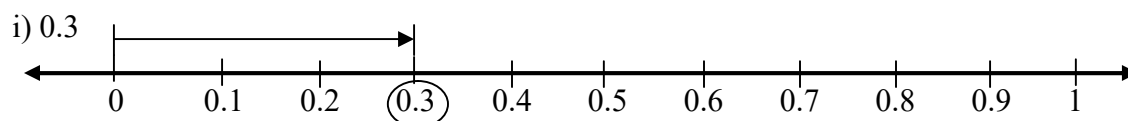
- Observation
- Guided discovery

Introduction :

- Pupils will be introduced to lesson by reviewing the previous work beefed up with mental work.

CONTENT :

- Pupils will learn to show the following on a number line



Activity :

Show the following on a number line

i) 0.4

ii) 0.5

iii) 0.6

iv) 0.7

v) 0.8

vi) 0.9

vii) 0.2

viii) 0.3

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TOPIC : Fractions

SUB TOPIC : Addition and subtraction of decimals

COMPETENCES : The learner;

Language :

- Reads, spells, pronounces and key words

Subject :

- Arranges decimals according to their places
- Solves problems involving addition and subtraction of decimals.

Methods :

- Brain storming
- Problem solving
- Guided discovery

Introduction :

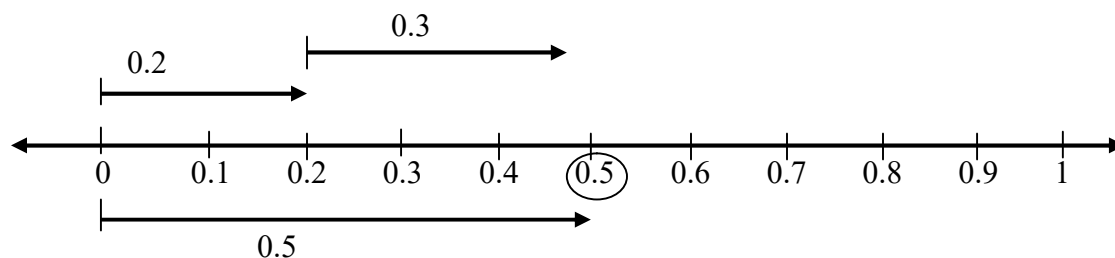
- Pupils will be introduced to lesson through brain storming and mental work.

CONTENT :

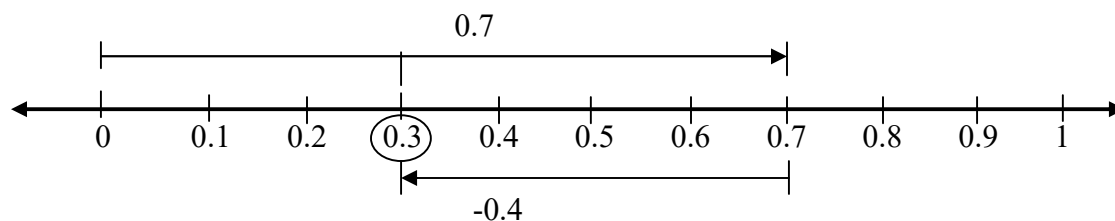
- Pupils will learn to Add $0.2 + 0.3$ using a number line.

$$\begin{array}{r} \text{i) } 0.2 \\ + 0.3 \\ \hline 0.5 \end{array}$$

Number line



ii) Subtract: $0.7 - 0.4$



Activity :

Workout the following using a number line.

i) $0.3 + 0.5$

ii) $0.4 + 0.2$

iii) $0.5 + 0.1$

iv) $0.4 + 0.4$

v) $0.2 + 0.2$

vi) $0.4 - 0.1$

vii) $0.7 - 0.3$

viii) $0.8 - 0.7$

ix) $0.5 + 0.1$

x) $0.4 - 0.1$

xi) $0.8 - 0.2$

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TOPIC : Fractions

SUB TOPIC : Place value of decimals

COMPETENCES : The learner;

Language :

- Reads, spells, pronounces and key words

Subject :

- Identifies place values of decimals

Methods :

- Whole class discussion
- Guided discovery

Introduction :

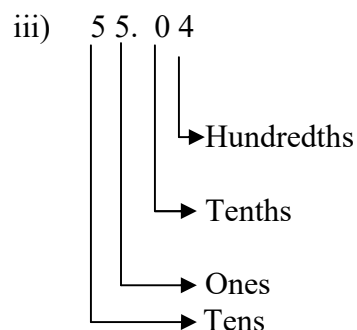
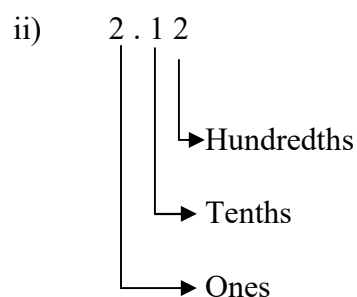
- Pupils will be introduced to a lesson by reviewing the previous lesson beefed up with mental work.

CONTENT :

- Pupils will learn place values of decimals

Find the place value of each digit given in the number below.

i) 0.2



Activity

1. Find the place value of each digit given in the numbers below:-

i) 0.3 , ii) 0.12 iii) 1.56 iv) 2.13

2. Find the place value of the underlined digits from the following numbers.

i) $0.\underline{1}2$ ii) $46.2\underline{4}$ iii) $\underline{5}.62$ iv) $26\underline{7}$
v) $\underline{4}.12$ vi) $6.\underline{7}$ vii) $\underline{1}2.83$ viii) $\underline{6}.73$

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TOPIC : **Fractions**

SUB TOPIC : **Writing decimals in words and vice versa**

COMPETENCES : **The learner;**

Subject :

- Reads, spells, pronounces and write decimals in words.

Methods :

- Whole class discussion
- Guided discovery

Introduction :

- Pupils will be introduced to a lesson by reviewing the previous lesson.

CONTENT :

- Pupils will learn Write the following in words

- i) 0.5 – Five tenths or Zero point five
- ii) 0.25 – Twenty five hundredths or Zero point two five.
- iii) 0.16 – Sixteen hundredth or Zero point one six.
- iv) 0.28 – Twenty eight hundredths or Zero point two eight.

Activity

Write the following in words

- i) 0.45 ii) 0.6 iii) 0.81 iv) 0.43
- v) 0.36 vi) 0.28 vii) 0.28 viii) 0.49
- ix) 0.13 x) 0.3 xi) 0.5 xii) 0.6
- xiii) 0.93 xiv) 0.27 xv) 0.32 xvi) 0.74 xvii) 0.38

Activity

3. Find the place value of each digit given in the numbers below:-

- ii) 0.3, ii) 0.12 iii) 1.56 iv) 2.13

4. Find the place value of the underlined digits from the following numbers.

- ii) 0. 1 2 ii) 46. 2 4 iii) 5. 6 2 iv) 2 6 7
- v) 4. 1 2 vi) 6 . 7 vii) 1 2.83 viii) 6. 73

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TOPIC : Fractions

SUB TOPIC : Identifying 2 dimensional shapes

COMPETENCES : The learner;

Language :

- Reads, spells, pronounces and key words.

Subject :

- Identifies the objects
- Draws the objects and
- States the names of the objects given
- Matches the objects to their geometric names.

Methods :

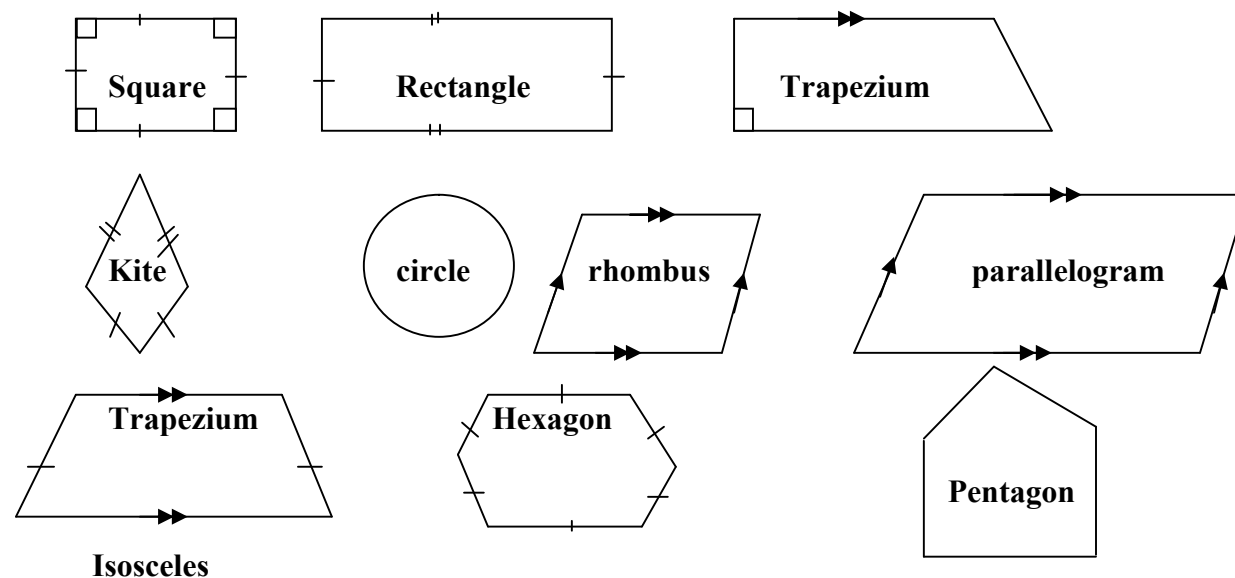
- Guided discovery
- Whole class discussion

Introduction :

- Pupils will be introduced to a lesson through clear orientation in Geometrical shapes

CONTENT :

- Identifying 2 dimensional shapes



| Date | Time | No. of pupils |
|------|------|---------------|
| | | |

TOPIC : 2- dimensional geometry

SUB TOPIC : Parts of a – circle

COMPETENCES : The learner;

Language :

- Reads, spells, pronounces and describes new words
 - o Circle
 - o Circumference
 - o Diameter
 - o Chord
 - o Radius

Subject :

- Identifies a circle
- Draws the circle
- Names all parts of a circle.
- Matches the objects to their geometric names.

Methods :

- Guided discovery
- Demonstration

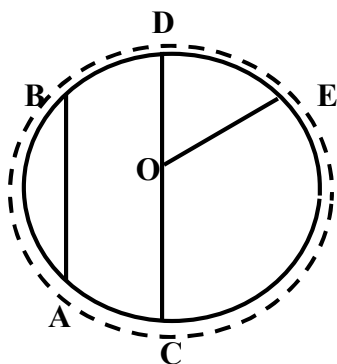
Introduction :

- Pupils will be introduced to a new lesson by reviewing the previous lesson.

CONTENT :

- Pupils will learn the following

PARTS OF THE (A) CIRCLE



- Centre
- OE – radius
- DC – diameter
- AB – Chord
- ⋄ - Circumference

Note: Centre :- Origin of a circle

Circumference:- distance round a circle

Circle :- circular / round object

Chord :- a line drawn across the circle

Diameter:- longest line passing through the circle to the edge of the circle

Radius:- short line from the centre of the circle

N.B: Diameter is twice the radius $\therefore D = 2r$

Radius is half the diameter $\therefore r = \frac{1}{2}D$

| Date | Time | No. of pupils |
|------|------|---------------|
| | | |

TOPIC : 2- dimensional geometry

SUB TOPIC : Finding perimeter of given polygons

COMPETENCES : The learner;

Language :

- Reads, spells, pronounces and describes key words

Subject :

- Describe perimeter
- Demonstrates steps of getting perimeter
- Works out problems about perimeter

Methods :

- Whole class discussion
- Guided discovery

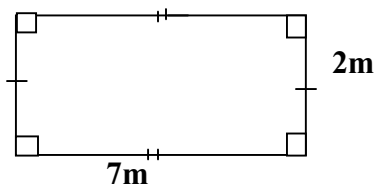
Introduction :

- Pupils will be introduced to a lesson by receiving the previous work beefed up with mental work.

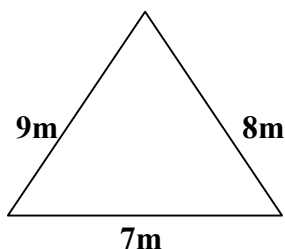
CONTENT :

- Pupils will learn the following;

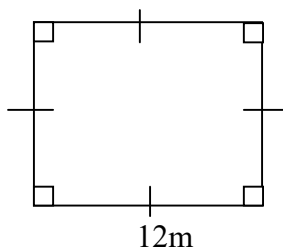
Find the perimeter of the following figures



Perimeter = Add all sides
= $(7 + 2 + 7 + 2)$ m
= 18m



Perimeter = Add all sides
= $(9 + 8 + 7)$ m
= 24m



Perimeter = Add all sides
= $(12 + 12 + 12 + 12)$ m
= 48m

| Date | Time | No. of pupils |
|------|------|---------------|
| | | |

TOPIC : 2- dimensional geometry

SUB TOPIC : Finding Area of a rectangle and a square

COMPETENCES : The learner;

Language :

- Reads, spells, pronounces and describes key words

Subject :

- Describe Area
- States steps of finding area
- Solves problems involving area

Methods :

- Whole class discussion
- Guided discovery

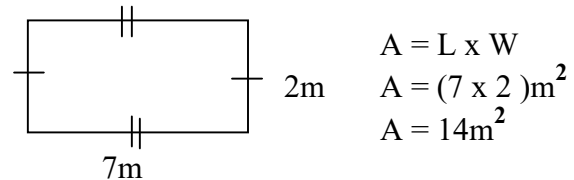
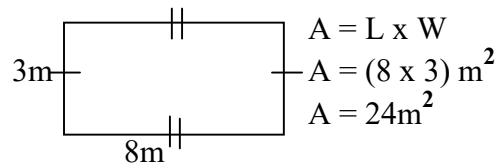
Introduction :

- Pupils will be introduced to a lesson by receiving the previous lesson

CONTENT :

- Pupils will learn the following;

Find the Area of the following figures



2ND / 3D GEOMETRY BREAK DOWN

1. Right and straight angles
2. Solid shapes
3. Parts of solid shapes
4. Volume of cubes and cuboids
5. Instruments used in construction
6. Measuring angles using a protractor
7. Drawing angles using a protractor
8. Constructing angles using a pair of compasses.
 - 60°
 - 120°
 - 90°
9. Constructing polygons
 - Triangles
 - Squares
 - Rectangles

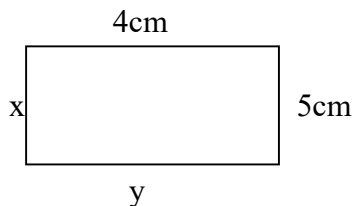
REGULAR PRACTICE AREAS

1. Area and perimeter
2. Lines of folding symmetry
3. Right and straight angles
4. Solid shapes
5. Parts of solid shapes
6. Volume of cubes / cuboids
7. Radius and diameter

8. Tallies
9. Long division (word problems)
10. Factors of numbers
11. Converting fractions (mixed / improper)
12. Comparing and converting fractions
13. Telling time
14. Writing numbers in words and figures
15. Representing sets on a venn diagram
16. Subtraction / addition of numbers
17. Algebra
 - Substitutions
 - Equations
18. Straight / right angle / triangles
19. Mean, mode, median, range
20. Area of shapes
21. Graphs

External EOT revision areas

1. Algebra of words (8 apples – 3 apples)
2. Conversion of m – cm
3. Value of 4 tens + 4
4. Shapes in other shapes
5. Shading fractions
6. Finding the expanded number
7. $\square \times 3 = 12$
8. Values and place values of digits
9. Venn diagrams for drawing
10. Drawing shapes star
11. Shopping – change
12. Tables
13. Area (Rectangle) – perimeter
14. Comparing (months, days, roman, fractions)
15. Naming length / width



16. Cuboid, parts, volume
17. Algebra substitution
18. Converting fractions

Example II

Find in the number represented by the tallies below:-

a) $\text{||||} \text{ ||||} \text{ ||||} \text{ ||||} \text{ |||} = 23$

b) $\text{|||} \text{ /} = 6$

c) $\text{|||} \text{ ||||} \text{ /} = 11$

d) $\text{|||} = 3$

e) $\text{|||} \text{ ||||} \text{ |||} \text{ |||} = 18$

f) $\text{|||} \text{ ||||} \text{ ||||} \text{ ||||} \text{ ||||} \text{ ||||} \text{ ||} = 32$

Exercise

1. Draw tallies for the following numbers:-

a) 19

b) 18

c) 23

d) 31

2. Draw a tally graph for the information (marks) below

5, 15, 23, 9, 31, 17

3. Amule is 32 years old. Represent his age in tally form.

| Date | Time | No. of pupils |
|------|------|---------------|
| | | |

SUB TOPIC : Interesting tally graphs

COMPETENCES : The learner;

Language :

- Reads, spells, pronounces and describes key words

Subject :

- Draws a tally graphs
- Identifies the tallies
- Interprets the tally graph correctly

Methods

- Observation
- Guided discovery
- Question and answer

Content

Examples

- A primary four child counted cars which came to his father's garage last week as shown below:-

| DAY | CORONA | LAND ROVER | STARLET | CARINA |
|-----------|---------|------------|---------|------------|
| Monday | /// | | /// /// | |
| Tuesday | /// | | /// / | /// / |
| Wednesday | /// / | /// / | | |
| Thursday | /// | | /// /// | /// // |
| Friday | /// /// | /// | /// // | /// /// // |

Questions

- How many cars did he count on Wednesday?
He counted 12 cars.
- How many land rovers did he count on Monday and Tuesday?
Monday = Nil , Tuesday No.1 – He counted no car.
- Find the number of cars he counted on Thursday.
20 cars were counted on Thursday

Activity

Pupils were told to count cars of different colours which passed their school during break time in 5 days. The information is shown below: Use the graph to answer questions that follow:-

| DAYS | White | Red | Black | Maroon |
|-----------|--------|----------|-------|--------|
| Monday | | ### | | |
| Tuesday | ### | | | |
| Wednesday | / | ### ## / | /// | ### |
| Thursday | ### / | /// | ### | ### ## |
| Friday | ### ## | | ### | |
| | ### ## | ### | ### | ## |

- How many cars were counted on Monday?
- What is the total number of cars counted on Monday and Tuesday?
- How many white cars were counted on Thursday and Friday?
- How many Maroon cars were counted on Wednesday?
- What day was the largest number of cars counted?
-

| Date | Time | No. of pupils |
|------|------|---------------|
| | | |

SUB TOPIC : Interesting Picto graphs

COMPETENCES : The learner;

Language :

- Reads, spells, pronounces and describes key words
 - o Picto graphs
 - o Scales

Subject :

- Describes picto graphs
- Identifies the scale for each given picto graph
- Solves problems on interpreting a picto graph

Methods


- Observation
- Guided discovery
- Question and answer


Content




N.B: Picto graphs are also known as picture graphs. A picto graph uses pictures to represent information

Scale is what a picture represents.

Examples


Birungi ate    apples. If each  represents 10 apples, how many apples did she eat altogether?






$$\text{} = 10 \text{ apples}$$

$$\text{  } = (10 + 10 + 10) \text{ apples}$$

$$= 40 \text{ apples}$$




























Example 2

Given that  represents 8 balls. Draw balls to represent 56 balls.

2. If  represents 20 huts, how many huts are represented by     ?


Picto graph


Birungi and Waru recorded the number of children who were absent from school each day.

| | | |
|-----------|---|--|
| Monday |        | |
| Tuesday |      | |
| Wednesday |    | |
| Thursday |     | |
| Friday |         | |


Scale :  = 5 children

- i) How many children were absent on Monday?

1  represents = 5

17  represent $(5 \times 7) = 35$ children were absent on Monday.

- ii) Find the number of children who were absent in that week.

1  represents = 5

$\therefore 27$ represents $(27 \times 5) = 135$
= 135 children were absent that week

| Date | Time | No. of pupils |
|------|------|---------------|
| | | |

SUB TOPIC : Interesting tally graphs

COMPETENCES : The learner;

Language :

- Reads, spells, pronounces and describes key words

Subject :

- Sets his / her suitable scale
- Select his/ her pictures
- Works out problems involving drawing pictographs

Methods

- Demonstration
- Guided discussion
- Q & A tech.

Content











































Examples

- The table below shows the number of trees planted by six farmers.

| Farmer | Akello | Matovu | Nagawa | Nansiiko | Rusa | Songa |
|--------------|--------|--------|--------|----------|------|-------|
| No. of trees | 60 | 50 | 80 | 90 | 70 | 50 |

Use the information above to draw a picto graph

Scale =  = 10 trees

| | |
|---------|--|
| Akello |         |
| Matovu |      |
| Nagawa |         |
| Nansiko |          |
| Rusa |        |
| Songa |      |

Activity

Draw a picto graph for the information shown on the table below

| Children | No. of Balls they had |
|-----------|-----------------------|
| Akech | 50 balls |
| Mugume | 20 balls |
| Ngobya | 35 balls |
| Tumusiime | 10 balls |

Scale :  represents 5 balls

Draw a picture graph for the above information in the table.

| Date | Time | No. of pupils |
|------|------|---------------|
| | | |

SUB TOPIC : Interesting line graphs

COMPETENCES : The learner;

Language :

- Reads, spells, pronounces and describes new words

Subject :

- Describes a line graph
- Solves problems on interpreting line graphs

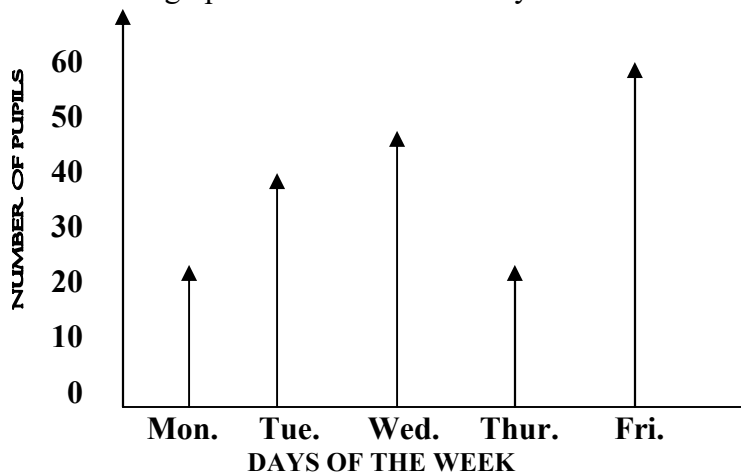
Methods

- Observation
- Guided discovery

Content : Interpreting line graphs

Examples

- The line graph below shows the daily attendance of P.4 pupils for a week.



- How many pupils were present on Tuesday?
- On which day did 50 pupils attend school?
- Which two days had the same attendance?

Monday and Thursday had the same attendance.

- Find the attendance for the whole week

$$\begin{array}{rcl} \text{Mon.} & = & 20 \\ \text{Tue} & = & 35 \\ + \text{ Wed} & = & 50 \\ \text{Thur.} & = & 20 \\ \text{Fri.} & = & 60 \\ \hline & & 185 \text{ pupils} \end{array}$$

| Date | Time | No. of pupils |
|------|------|---------------|
| | | |

SUB TOPIC : Interesting bar graphs

COMPETENCES : The learner;

Language :

- Reads, spells, pronounces and describes new words

Subject :

- Describes a bar graph
- Identifies the vertical and horizontal scales
- Solves out problems involving interpreting bar graphs

Methods

- Guided discovery
- Question and answer technique

Content

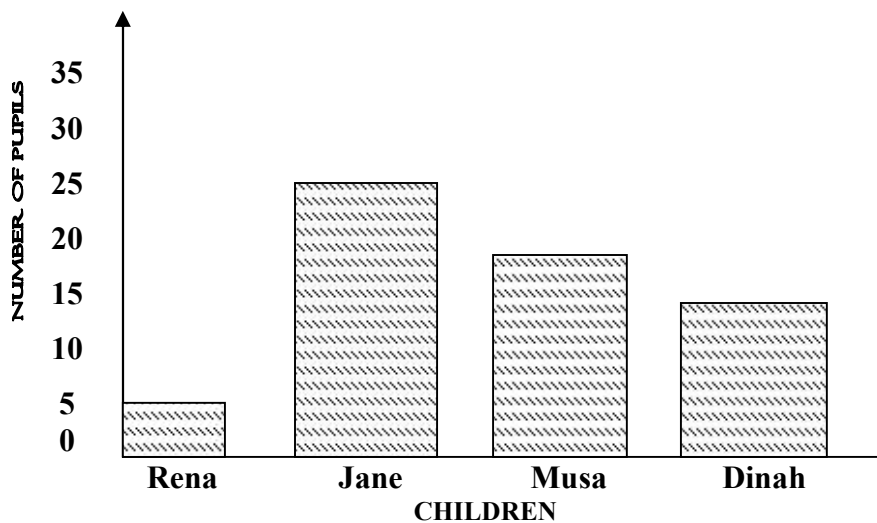
- Interpreting bar graphs

Note

- A bar graph uses bars to represent information
- State the scales both vertical and horizontal first.

Examples

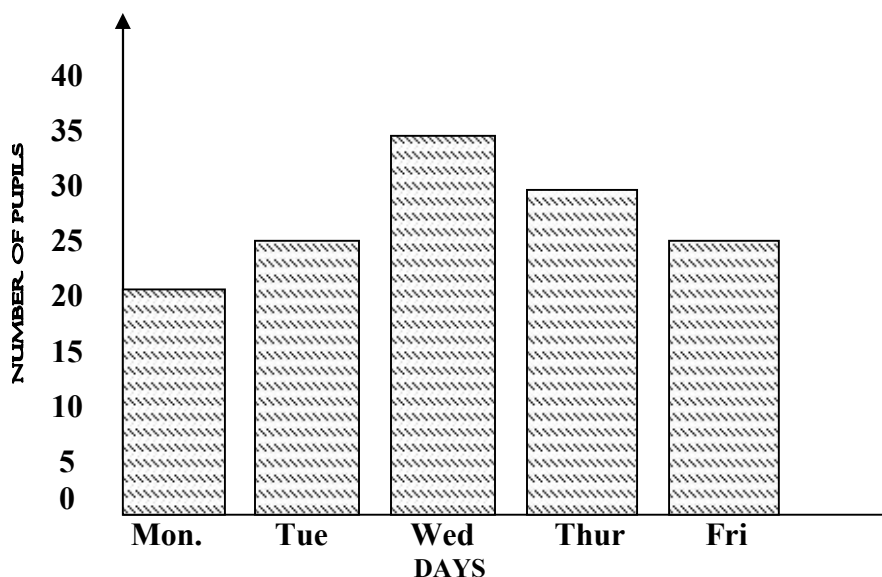
The graph below shows the amount of water bought from the well by four children.



1. Who brought the greatest amount of water?
Jane brought the greatest amount of water.
2. Who brought 20 litres of water?
Musa brought 20 litres of water.
3. How much water did Rena and Musa bring?
They brought 25 litres of water.
4. How much water did the four children bring?
They brought 65 litres of water

Exercise

The graph below show the daily attendance of P.4 pupils for a week. Study it and answer the questions that follows.



- How many pupils were present on Thursday?
- Which days had the same number of pupils present?
- Which day had the biggest number of pupils?
- Find the total number of pupils who attended that week?

| Date | Time | No. of pupils |
|------|------|---------------|
| | | |

SUB TOPIC : Interesting bar graphs

COMPETENCES : The learner;

Language :

- Reads, spells, pronounces and describes key words

Subject :

- Sets the suitable scale
- Works out problems involving drawing bar graphs

Methods

- Guided discovery
- Observation

Content

Drawing bar graphs

- You are required to set a suitable scale for your graph.

Examples

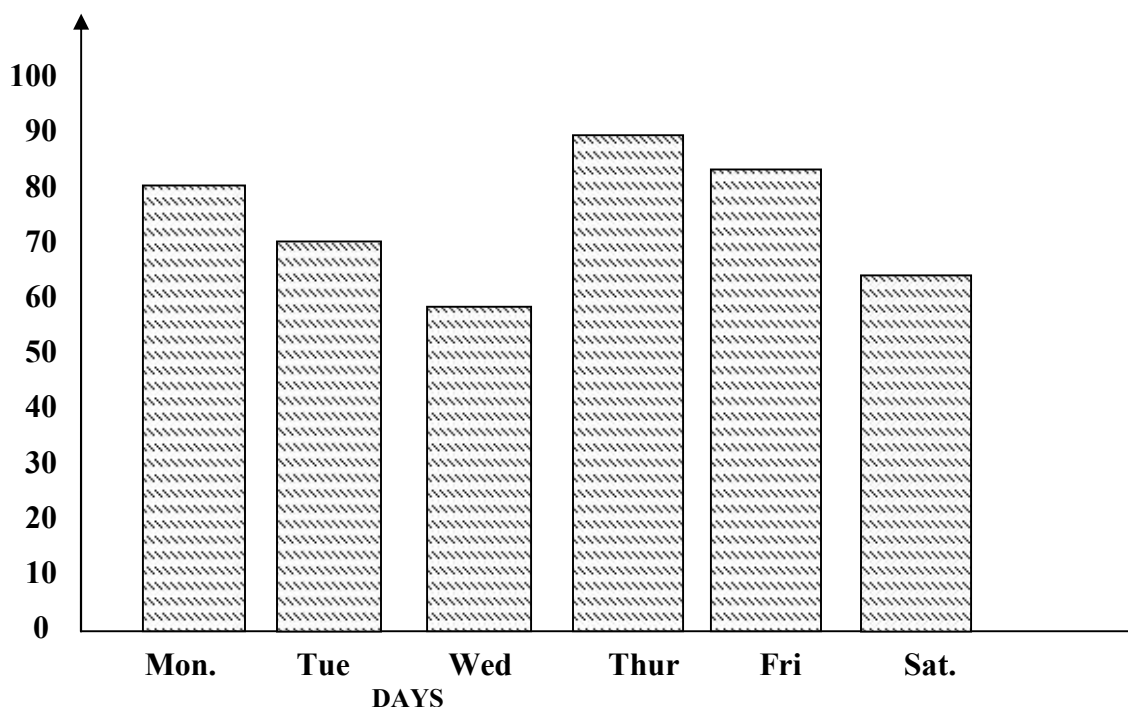
The table below shows the litres of milk a school bought in 6 days of a week.

| Day | No. of litres |
|-----------|---------------|
| Monday | 80litres |
| Tuesday | 75 litres |
| Wednesday | 60 litres |
| Thursday | 90 litres |
| Friday | 85 litres |
| Saturday | 70 litres |

Vertical scale: 1 small square represents 10 litres.

Exercise

The graph below show the daily attendance of P.4 pupils for a week. Study it and answer the questions that follows.



Activity

Study the attendance table below and use it to draw a bar graph

| Days of the week | Mon. | Tue | Wed | Thur. | Fri. |
|--------------------|------|-----|-----|-------|------|
| Pupils' attendance | 15 | 20 | 15 | 10 | 25 |

Use a scale of 1 small square represents 5 pupils to draw a graph.

| Date | Time | No. of pupils |
|------|------|---------------|
| | | |

SUB TOPIC : Statistics

COMPETENCES : The learner;

- Describes all the terms used ,reads, spells, pronounces the words correctly.
- Collects, records, interprets the data given.

Subject :

- Sets the suitable scale
- Works out problems involving drawing bar graphs

Methods

- **Demonstration**
- **Guided discovery**
- **Observation**

Content : Statistics

Note:

- This branch deals with collection, recording analyzing and interpretation of information.

Common terms used

- Mode (modal mark)

The item that appears many times than others in the arrangement. e.g. ②, 4, 5, ②, 3

∴ 2 times is the modal frequency.

Range:

The difference between the highest and the lowest item in the arrangement. e.g. 2, 4, 5, 2

$$\begin{aligned}\text{Range} &= \text{Highest} - \text{lowest} \\ &= 5 - 2 \\ &= 3.\end{aligned}$$

Median

The middle item arranged in order from the smallest to the biggest or vice versa e.g 2, 5, 4, 2, 3.

∴ The median is 3.

Mean / Average

The total number of items divided by the number of items.

$$\begin{aligned}\text{Mean / Average} &= \frac{\text{Sum of items}}{\text{No. of items}} \\ &= \frac{2 + 2 + 3 + 4 + 5}{5} \\ &= \frac{16}{5} = 3 \frac{1}{5}\end{aligned}$$

Activity

A pupil in P.4 scored the following marks in a test 8, 12, 10, 8, 2. Find

- The mean
- The range
- The mode
- The modal frequency
- The median.