



P. 7 INTEGRATED SCIENCE ACTIVITY SET III 2020.

1. (a) What is immunity?

.....
.....

(b) What type of immunity is acquired when;

(i) a child is injected with BCG vaccine?

.....

(ii) a child suffers and recovers from measles?

.....

(c) State **two** ways in which immunity is important.

(i)

(ii)

2. State any **two** childhood immunisable diseases caused by:

(a) virus (i) (ii)

(b) Bacteria (i) (ii)

3. (a) What causes **Hepatitis B**?

.....

(b) State any two:

Signs of Hepatitis B (i)

(ii)

Symptoms of Hepatitis B (i)

(ii)

(c) How does Hepatitis B spread from one person to another?

.....

(d) Which body organ is greatly affected by Hepatitis B?

.....

4. Identify the childhood immunisable disease with the following signs and symptoms:

(a) Chronic cough, loss of weight, chest pain

(b) Stiff muscles, sudden and strong tightening of muscles when touched

.....

(c) Paralysis of limbs, lameness

1. (a) What are vaccines?

.....

(b) Give any **two** devices used to store vaccines.

(i)

(ii)

(c) Give three types of vaccines.

(i)

(ii)

(iii)

(d) Why should vaccines be stored under cold conditions?

.....

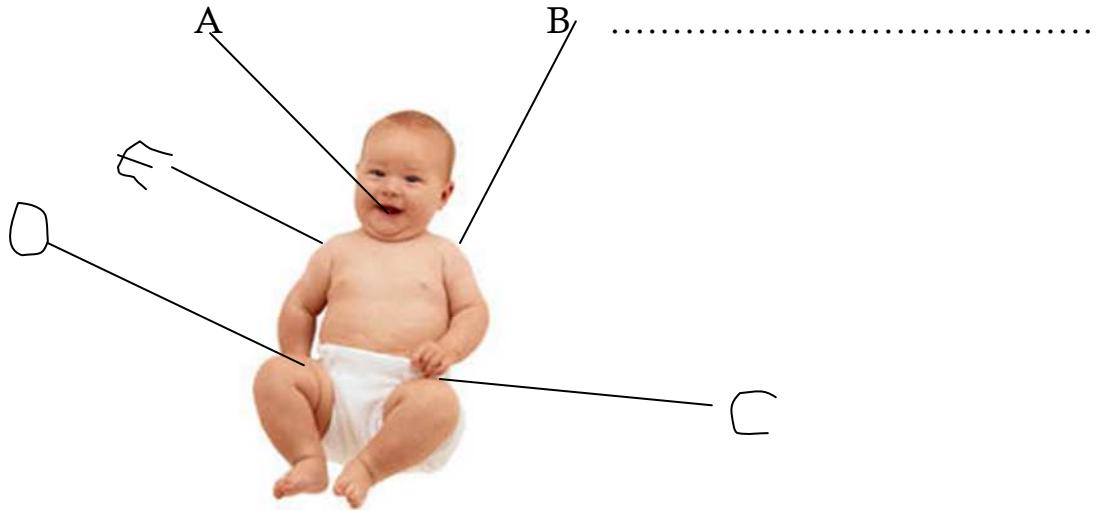
(e) State two ways vaccines are introduced into the human body.

(i)

(ii)

6. The drawing below shows some of the administration sites of vaccines. Study it and answer questions about it.

a. Name the vaccines administered at the sites marked ABCD and E.



A	D
B	E
C		

b. What method is used to administer the vaccine at B?

.....

c. Name any one disease immunized by administering the vaccine through site D.

.....

d. At what age is the vaccine administered through site B given?

.....

e. Why is the vaccine administered through site E given at birth?

.....

7. (a) Which immunisable disease is spread through bites of an infected aedes mosquito?

(b) State any two signs of the disease you named in (a) above.

(i)

(ii)

(c) How best can the disease you stated in (a) above be controlled?

.....

8. Study the table below and fill in what is missing correctly.

	Disease	Cause	Spread	Signs and symptoms	Effects
a.	Polio	_____	Through contaminated water and food	-paralysis of limbs - lameness	Lameness
b.	_____	Bacteria	-through the air. - droplets of saliva after coughing	- Chronic cough - weight loss - production of sputum with blood stains	- death if not prevented or treated in time. - damages lungs, bones and brain.
c.	Tetanus	Bacteria	_____	-stiff muscles -spasm when touched	Jerking and sudden death
d	_____	Virus	- contaminated skin cutting tools -sexual intercourse with infected person. -from infected mother to	-fever -yellow eyes - yellow urine -whitish stool -chest pain	-damages the liver

			child at birth		
e	Measles	Virus	Through the air		Pneumonia and death
f	Pertussis	Bacteria	Air or droplets of saliva	Severe coughing spells may end in vomiting	
g		Bacteria	-through air -droplets of body fluids	-sore throat, swollen neck, - difficulty in breathing - fever	-choking -breathing may stop leading to death

9.(a) Identify any three important features on a health card.

- (i)
- (ii)
- (iii)

(b) State any two ways in which a health card is important.

- (i)
- (ii)

(c) State any two roles of each of the following in immunization.

- Individual : (i)
- (ii).....
- Community : (i)
- (ii)

10.(a) State any two ways in which machines make work easier.

- (i)
- (ii)

(b) Why is an aeroplane grouped under complex machines?

.....

(c) Give any one characteristic of simple machines.

.....

(d) Why is a hoe a simple machine?

.....

11.(a) Give any three examples of force.

(i)

(ii)

(iii)

(b) What takes places when a force is applied at a point causing the load to move in the direction of the force?

.....

(c) A man pushes a wheelbarrow using a force of 20 kgf through a distance of 8 metres. Calculate the work done by the man.

.....

.....

.....

.....

12.Match the term in A to the right definition in B.

A

B

Effort

the weight to be moved or lifted

Fulcrum

the measure of the turning effect of a force about a point.

Load

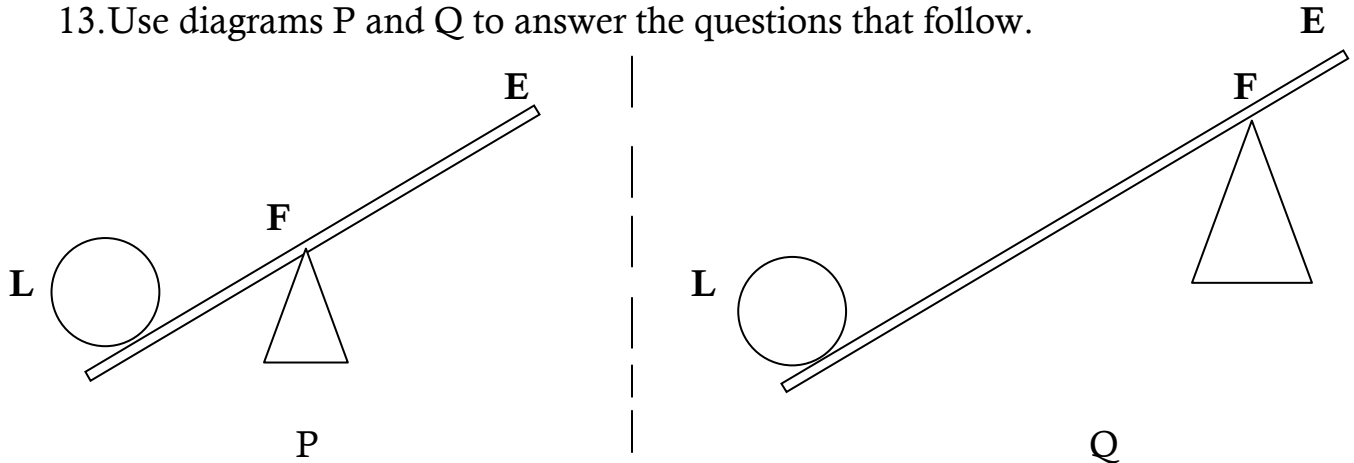
the force applied to move a load

Moment

the point around which a machine can turn.

- (i) the weight to be moved or lifted
- (ii) the measure of the turning effect of a force
about a point.
- (iii) the force applied to move a load.
- (iv) the point around which a machine can turn.

13. Use diagrams P and Q to answer the questions that follow.



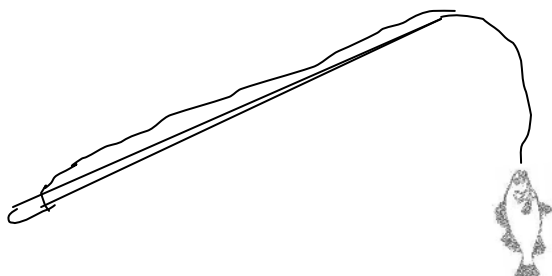
- a) In which of the machines P and Q is less effort needed to move the load?
.....
 - b) Give a reason to support your answer in (a) above.
.....
 - c) Use arrows on diagram Q to show direction of: (i) Load (ii) Effort
 - d) State the reason why the machine in the diagrams above is grouped under First Class Levers.
 - e) Besides the machine in the diagram, give any two other machines belonging to the First Class Levers.
 - (i)
 - (ii)
- 14.(a) State two ways second class levers make work easier.
- (i)
 - (ii)

(b) Give any two devices grouped under second class lever.

(i)

(ii)

15. The diagram below is of a simple machine. Study it and answer questions about it.



a. Indicate on the diagram the position of the Effort, Fulcrum and the Load.

b. To what class of levers does the device shown in the diagram belong?

.....

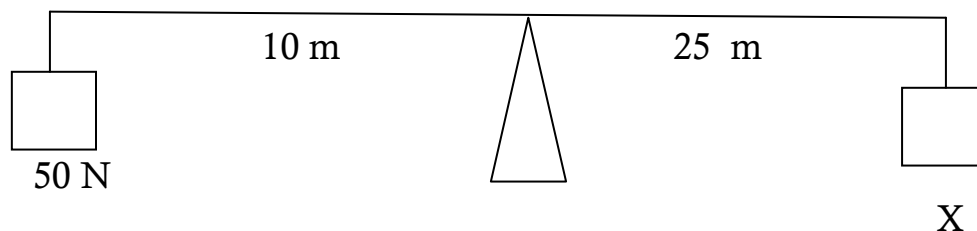
c. Of what importance is such a machine to people?

.....

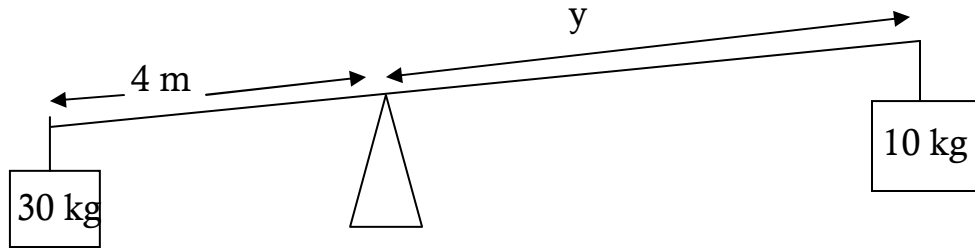
16.(a) State the principle of moments.

.....

(b) The diagram below shows a simple machine lever. What is the size of the weight (x) that can make it balance?

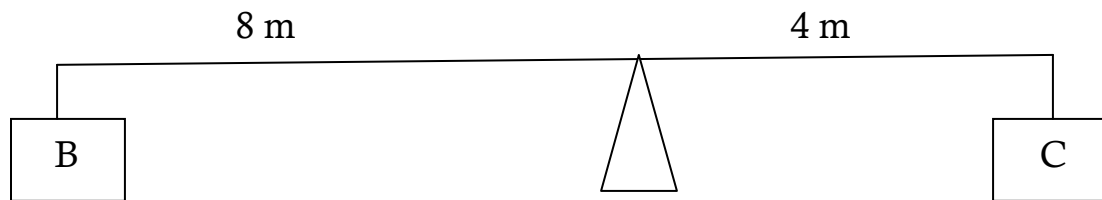


17.(a) Calculate the value of y needed to balance the sea saw.



b. How can the see saw above be made to balance?

18. The diagram below shows loads balancing. Study it and answer questions about it.

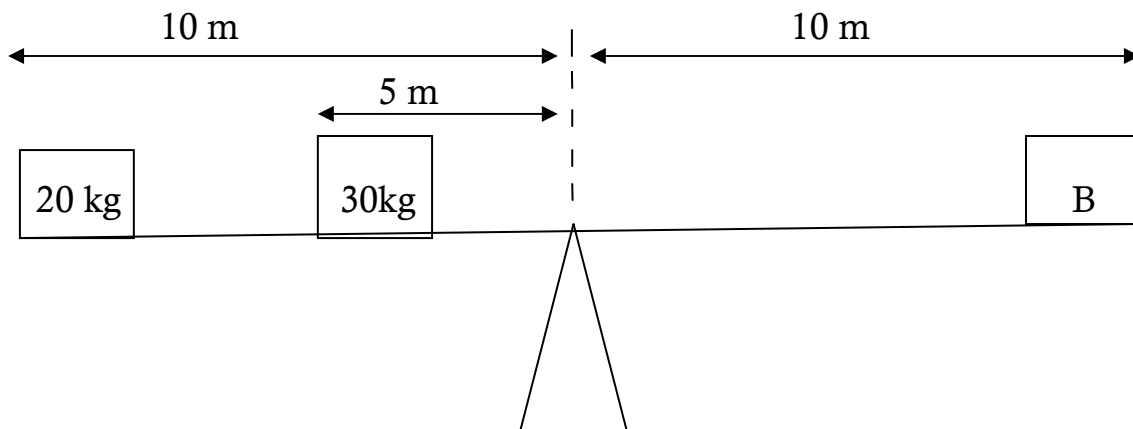


a. Using an arrow and letter P show the position of the pivot.

b. Which load is heavier?

c. Give a reason to support your answer in (b) above.

19. What load should be placed at point marked B to make the beam balance?



20.(a) What term describes the number of times a machine simplifies a given work?

(b) Ogapa used a crow bar to lift a bucket of 600 N using a force of 100 N. How much did the crow bar make her work easier?

.....
.....
.....

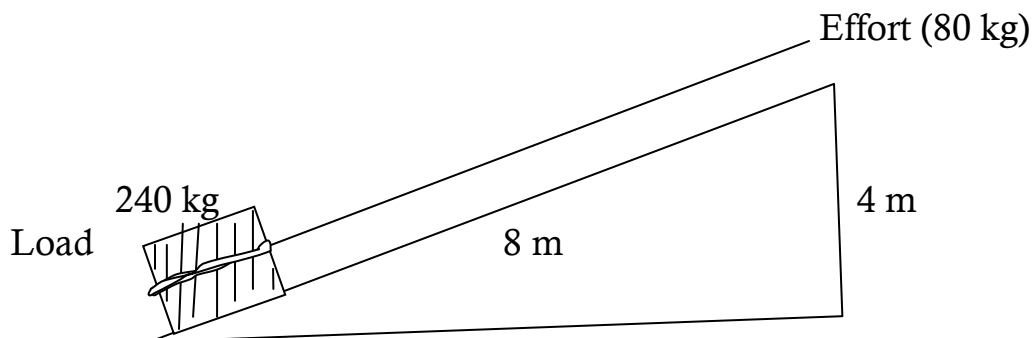
(c) What is the weight of the load that is moved by a machine with a Mechanical Advantage (M.A) of 3 using an effort of 40N?

.....
.....
.....

(d) Calculate the effort needed by Magada to use a crow bar in order to lift a load of 4000 N if the M.A of the crow bar is 5.

.....
.....
.....

21.The diagram below shows a machine used to lift a load. Study it and answer questions about it.



a. Name the machine shown in the diagram.

.....

b. What distance does the load and the effort move through?

(i) Load

(ii) Effort

c. Use an arrow to show the direction of the effort.

d. How can less effort be used to pull the load?

.....

e. Find the Mechanical Advantage (M.A) of the machine shown in the diagram.

.....

.....

f. How does such a machine simplify work?

.....

g. Besides the machine in the diagram, give any other two such machines.

(i) (ii)

22.(a) Give any four machines that are classified as wedges.

(i) (iii)

(ii) (iv)

(b) State any two uses of wedges.

(i)

(ii)

(c) Name the wedge used by hunters to kill animals at a distance.

.....

(d) Which part of the human body acts as a wedge for cutting?

.....

(e) Why is an axe referred to as a double inclined plane?

.....

23.(a) What term describes a machine with an inclined plane wound round a rod in form of a raised thread?

.....

(b) Give any two examples of machines that are grouped as the one mentioned in (a) above.

(i)

(ii)

(c) Give any two ways the machine you named in (a) above can be useful.

(i).....

(ii)

24.(a) Name three types of pulleys.

(i).....

(ii)

(iii).....

(b) State any four ways pulleys are used in our daily life.

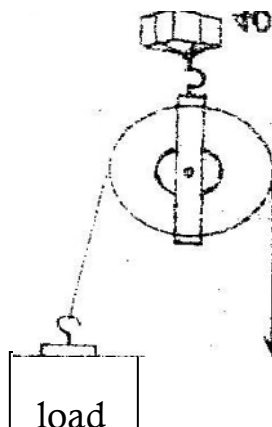
(i)

(ii)

(iii)

(iv)

25.The diagram below is of a pulley. Use it to answer questions about it.



a. Name the pulley system shown in the diagram.

.....

b. Using arrows indicate on the diagram the direction of the effort and load.

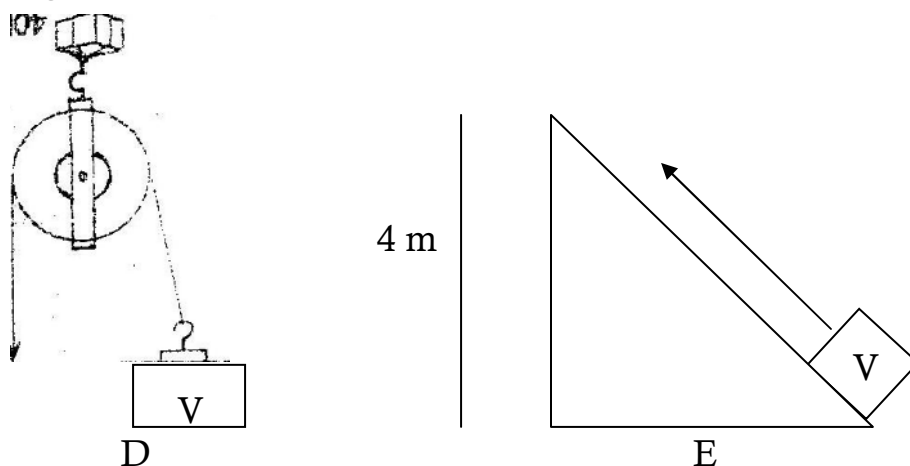
c. Why is the Mechanical Advantage (M.A) of that pulley one?

.....

d. Why would you classify such a pulley system as a First Class Lever?

.....

26. The diagram below shows two machines.



a. Name the machine marked:

(i) D

(ii) E

b. Which of the above machines would you prefer to lift load V?

.....

c. Give a reason for your answer in (b) above.

.....

27. Atim used an effort of 49 N to lift a load of 98 N using a pulley.

a. Which type of pulley did she use?

.....

b. Give a reason for your answer in (a) above.

.....

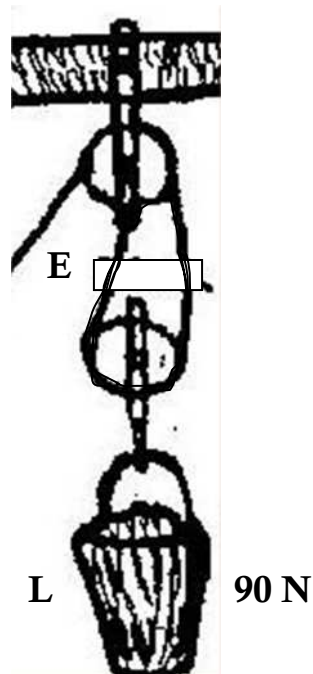
c. Calculate the M.A of the pulley used by Atim.

.....

.....

.....

28. The diagram below is of a pulley system.



a. Name the pulley system above.

.....

b. Use an arrow to show the direction of movement of;

(i) load

(ii) effort

c. Calculate the effort needed to lift the load.

.....

.....

.....

d. Name any three devices that use pulleys to operate.

(i) (ii) (iii)

29.(a) Give any four wheels and axle machines.

- (i) (iii)
(ii) (iv)

(b) Name the **two** types of wheel and axle machines.

- (i)
(ii)

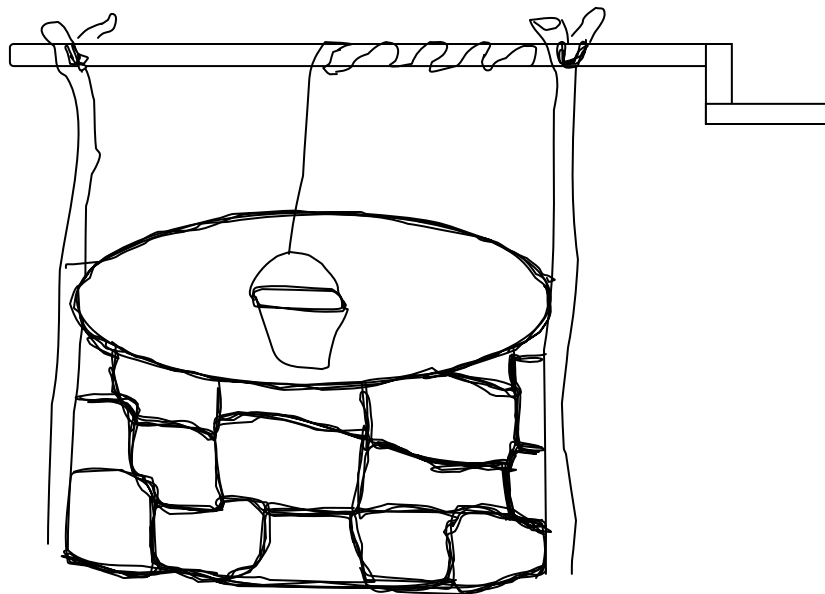
(c) How do wheels and axle simplify work?

.....

(d) Name the wheel and axle device used by tailors.

.....

30.The diagram below is of a machine. Study it and answer questions that follow.



a. Name the machine shown in the diagram.

.....

b. How is the machine shown useful to people.

.....

c. Using an arrow show the movement of the load if the handle of the machine is to move clockwise.

d. How should one turn the handle of the machine above to move the bucket downwards?

.....

e. How can the machine be improved in order to use less effort?

.....

31.(a) What is friction?

.....

.....

(b) Which type of friction occurs when;

(i) a fish is swimming?

(ii) a nail is in wood?

(iii) tyres are running on the ground while one is driving?

.....

(c) State any four ways friction may be a useful force.

(i)

(ii)

(iii)

(iv)

(d) State any one way of increasing friction on the road surface.

.....

(e) How do treads and spikes increase friction?

.....

(f) Give any four ways friction may be a useless force.

(i)

(ii)

(iii)

(iv)

(g) State any four ways of reducing friction.

- (i)
- (ii)
- (iii)
- (iv)

(h) How does each of the following reduce friction?

- (i) Lubrication
- (ii) Rollers and ball bearings
- (iii) Streamlining of objects

SET III



PRIMARY 7 SOCIAL STUDIES.

PICTURES AND MAPS.

1. A picture is a representation of an object as seen and drawn from the ground level.
 - A photograph of anything as seen and drawn from a side.
 - A real image of an object as seen and drawn from a side.
2. A map is almost defined in the same way only that with a map an object is seen and drawn directly from above.
3. Similarities between Maps and Pictures.
 - a) Both are seen and drawn.
 - b) Both are used to represent objects.
4. Differences between maps and Pictures.
 - a) Maps are drawn directly from above while pictures are drawn from aside.
 - b) Maps are not as detailed as pictures.

Activity.

1. Positions where one can be to determine and take maps of objects eg aeroplanes, trees, roofs.
2. Drawing pictures and maps of objects like houses, trees, boxes, chairs, churches, hut basket, battle, pot, classroom, stool, table, tin, bell, school, hat,
3. Why are pictures easier to understand / interpret than maps?

ELEMENTS OF A GOOD MAP.

1. Elements of a good map can also be called qualities of a good map.
(b) Elements of a good map enable a map reader to read and understand a map better.
2. These elements of a good map include:-
 - a) A compass.
 - b) A map scale.
 - c) A map key.
 - d) Borderline /Frame / an enclosure.
3. Diagrams illustrating a scale and a compass.
4. Significance of each element to a map reader.
 - a. Heading – Used to tell what the map is all about.
 - b. A compass – used to show the direction of places.
 - c. A map key – used to calculate the actual distance.
 - d. Borderline – used to enclosure a map.

Activity

5. Discussion about challenges map readers face when reading a map without the specified elements.
6. Name the types of scales and diagrammatic explanation and calculating the scale using the given units.
7. Drawing and naming map symbols such in swamp, church, bridge, railwayline, airport, river, waterfalls, dam, mountain, mountain peak, a forest, lake, ...

MORE ABOUT A COMPASS.

1. The four major points of a compass can also be called the cardinal points of a compass. The northern point is the most important one.

2. There are semi cardinal points South east, South west, North east and North west. The other extra four are called tertiary points North North West ...

ACTIVITY

1. Draw a compass and name all the sixteen points.
2. How many degrees are there between each point?
3. Telling the points lying opposite each point.
4. Movement of the sun and position of shadows depending on the time of the day.
5. Using Atlases to determine towns, features like lakes and countries' directions.
6. Besides the compass, name the features locally used to tell direction eg tall trees, buildings, hills, swamps.
7. Specific groups of people who use a compass in their daily work and how they are affected without it eg (sailors, ship captains, soldiers when fighting ...

MORE ABOUT MAP FRAMES.

1. The map frame shows us where the map ends. It serves as a boundary.
2. Within a framed / allocated place, symbols are used instead of real objects.
Advantages of using clear and neat maps are produced.
3. Maps produced are not over crowded or congested.
4. A map of an enclosed compound of the school, instead of showing trees, use symbols.

ACTIVITY:

1. What is the advantages of enclosing / framing or fencing a school. (expected answer)
 - a. It prevents stubborn pupils from escaping.
 - b. It prevents intruders from entering the school.
 - c. It adds beauty to a school.
 - d. School advertisements are published on it.
 - e. It helps to mark school boundaries.
 - f. It reduces on cases of trespassing.
 - g. It controls land encroachment.
 - h. Wild animal and mad dogs can't affect pupils.
 - i. Besides the perimeter wall fence, what other things can be used to mark school boundaries?
2. Besides the perimeter wall fence, what other things can be used to mark school boundaries (cemented concrete stones, trees, valleys ...)

LEADERSHIP IN OUR COMMUNITY.

1. A leader is a person who leads and guides others.
2. A good leader should have the following qualities:- should be exemplary, faithful, obedient, humble, trustworthy, hardworking, peaceful.
3. Leaders are at different levels and should be respected.

ACTIVITY.

4. How can one acquire leadership in the community?
 - a. Traditional leaders.
 - b. Political leaders.
5. Give two ways how you can become a school prefect.
6. How can one lose her post as a prefect?

7. How can top political leaders lose their posts?
8. What are the advantages and disadvantages of getting leadership through inheritance?
9. What are the advantages and disadvantages of getting leaders through elections?
10. What are the advantages of having leaders in our areas?
 - a) They solve minor discipline.
 - b) Encourage people to work / promotes unity / peace/ link top leaders to local people.

LEADERS AT LOCAL LEVELS.

1. These leaders range from the local council committee one to local council level five. (village to district).
2. Local council I - This is the village level.
 - Local council II - It is the parish level.
 - Local Council III - It is the county level
 - Local Council V - It is the top one at the district.
3. Important leaders at the district level include:- chairperson L.C.V, Resident District Commissioner, Chief Administrative Officer, District Probation Officer, District Education Officer, Health, Forestry ...

ACTIVITY

1. Give two duties played by the following:-
 - a. chairperson L.C.V.
 - b. Chief Administrative Officer
 - c. Resident District Officer.
2. How do the above mentioned people acquire their administrative posts?

3. What is the value of the chairperson local council III in the administrative structure?
4. Which ministry is in charge of local councils?

DECENTRALISATION

1. Decentralization is the transfer of executive power from the central government (ministerial level) to the local authorities.
2. Local authorities are given power and responsibilities to run their affairs to meet the desires of local people.
 - Working on feeder roads, solving minor disputes through lower court, improving on health, security, education and also drafting by-laws.

ACTIVITY

3. Which ministry is in charge of decentralization?
4. Explain how the decentralization system has greatly improved on the following areas:-
 - a. Health
 - b. Transport
 - c) Education
 - d) Security.
5. Why is the government creating more districts in the country? Discuss its disadvantages also.
6. Outline the advantages and disadvantages of decentralization to both the people : to the government.
7. Why do district local authorities need good means of transport?

ELECTIONS:

1. Define the term elections.
2. Why do people get involved in elections. (Get new leaders, exercise democracy, peaceful power transfer.
3. Why are Ugandans below 18 years not allowed to elect?

4. Define these types of elections:-
 - Secret ballot election.
 - Living behind a candidate. (open voting).
5. Advantages and disadvantages of voting by lining behind a candidate using ballot.
 - (b) Universal Adult Suffrage – where all voters in an area participate.
6. Define the following in election:-
 - Ballot papers - polling station - constituency
 - ballot boxes - voter's register - polling day
 - voting by proxy - voter's card - electoral college
 - presiding officers - polling assistant
 - Electorate - Person qualifies to vote. – Returning officer.
7. Conditions which can result into by-elections.
8. What is the disadvantage of holding by-elections.
9. Name the body which organizes elections in Uganda.
10. Name the challenges faced by the Electoral Commission.

Duties of electoral commission.

- Organise elections, design polling stations, sensitise people, obtain elections, register votes, name polling stations, organize by-elections, organize electoral days, supervise elections, formulate law about elections.

THE LOCAL COUNCIL COMMITTEE ONE.

1. It can also be called the village committee. It is elected by the citizens in that area. It started with nine members. It went to ten members and per now, it has eleven members.
2. Duties of the local council committee.

- Ensuring that people obey the laws.
- Advising citizens to maintain sanitation.
- Settling minor disputes.
- Encouraging people to participate in elections.
- Explaining government policies eg UPE, USE.
- Seconding good citizens to join the army and the police.
- Encouraging people to work and increase of the food production.

ACTIVITY

4. How can one become a chairperson of L.C one?
5. How are local council committee useful in our committees / communities?
6. Name one factor which can result into a by-election in our villages.
7. Identify at least three cases which cannot be settled by local council committee members.

MEMBERS OF THE L.C ONE.

1. Chair person local council one.
 - Chairs local council meetings.
2. The vice chairperson.
 - Deals with children's affairs.
 - Chairs village meetings in the absence of the chairperson.
3. General Secretary.
 - Records all the discussed minutes.
 - Keeps records, documents and files for the committee
 - Calls people to attend meetings.
4. Secretary for finance
 - Responsible for the funds of the committee.

5. Secretary for defense.
 - Keeps peace and security in an area. (village)
6. Secretary for Education, Information and Mass mobilization.
 - Passes on information to the people.
7. Secretary for the youth.
 - Deals with affairs of the youth & co-curricular
8. Secretary for women and public health
 - Responsible for the affairs of the women.
9. Secretary for the people with disabilities.
 - Mobilises people with disabilities to take part in national developments.
10. Secretary for production and environment protection.
 - Encourages people to protect the environment.
11. Secretary for the elderly.
 - Represent elders on the committee.

RELIGIOUS LEADERS

- 1.They lead people spiritually. We have Moslems, Catholics, Protestants and leaders of tradition religions. These places are known as worshipping places.
2. Ways of caring for worshipping places.
3. Identifying the religious leaders in each denomination.

ACTIVITY

- 4.What are the general duties of religious leaders?
 - a. They teach morals to citizens.
 - b.The encourage people to work.
 - c. They encourage people to work.
 - d. They settle family and minor disputes.
 - e. They carryout sacraments like baptism.

- f. They officiate functions like weddings, burial ceremonies.
 - g. They swear in political leaders.
 - h. They promote government policies like advising parents to take their children to school.
 - i. They teach religious affairs.
 - j. They unit people by carrying out reconciliation programmes.
5. Give the specific roles played by the following.
- | | |
|----------------|-------------|
| a. Arch Bishop | d. Reverend |
| b. Cardinal | e. Muazzin |
| c. Mfuti | f. Imam |

CULTURAL LEADERS

1. Cultural leaders can also be called traditional leaders. Each tribe in Uganda almost has traditional leaders.
2. Cultural leaders play the following duties.
 - a. They settle minor disputes in their area of operation.
 - b. They assist the government to mobilize people for national development.
 - c. They encourage people to work.
 - d. They create unity among people.
 - e. They promote culture among people.
 - f. They advise people to be good citizens.
 - g. They organize people to repair village roads, ordinary wells and boreholes.

ACTIVITY

3. What is a kingdom?
4. What is the oldest kingdom?
5. Founders of each kingdom.

6. Write down any four factors which made Buganda kingdom to expand.
7. What made Bunyoro-Kitara to decline.
8. Identify any two characteristics of kingdoms.
9. Outline at least two disadvantages of kingdoms.
10. Give the titles given to these kingdoms:-

– Buganda	Bunyoro	Acholi	Wanga
Bunyoro	Rwenzururu	Busoga	

IMPORTANT PLACES IN OUR COMMUNITY.

1. These are the places in the community where people get the services they need.
2. Examples of social service centres:-

Markets	petrol stations	prisons
Banks	churches	shops
Police stations	mosques	salons
Barracks	police offices	parking centres

ACTIVITY

3. Give the significance of having each of the social service centres as enumerated above.
4. Write the given social service centres as they appear in No. 2 above and besides them give the services got from them e.g. school, education.
5. Mention the people who serve us in the enumerated social service centres.
6. Give ways how we can care for the social service centres enumerated.
7. Outline the challenges the service provides in the enumerated social service centres face when they are serving people in the community eg
 - Corruption among leaders
 - Lack of enough funds.

PHYSICAL FEATURES IN THE COMMUNITY.

1. Physical features are natural land forms and drainage features.
2. Examples of natural land forms include:- Hills, Mountains, Rift valleys, Natural vegetation.
3. Drainage features have water in them like:- lakes, rivers, swamps, oceans, seas, ponds ..

ACTIVITY

4. Differentiate between natural land forms and drainage relief features.
5. Give the advantages of having each of the named physical features.
6. What is the disadvantages of having each of the named physical features.
7. Discuss the formation of some of the given physical features e.g. mountains, rift valleys.
8. How are forests useful to the following:-
 - Herbalists
 - School cooks
 - Carpenters, builders and fishermen.
9. How are mountains and hills important to:-
 - Road construction
 - communication
10. How are water bodies like lakes useful to the following:-
 - Builders
 - navigation

PHYSICAL FEATURES TO MAN.

1. The presence of physical features in a community can be a threat to human beings economically, socially and politically.

2. Politically, some physical features can at times act as hiding places for rebels like the Rwenzori highlands.

ACTIVITY

3. How does the presence of forests affect human beings negatively.
 - Hiding places for the rebels - breeding places for vectors
 - They make road construction difficult.
4. The presence of mountains.
 - result into landslides - encourage soil erosion
 - Result into volcanic eruption
 - Make road construction difficult e.g. Rwanda, Kabale.
5. The presence of wetlands / swamps
 - act as breeding places for vectors such as water snails, mosquitoes.
 - Make road construction difficult since the ground is soggy
 - They are also hiding places for the dangerous aquatic animals such as crocodiles.
6. How did the building of the railway delay in central Kenya?

NATURAL VEGETATION IN OUR COMMUNITY.

1. Defined as the plant cover which grows on its own.
2. natural vegetation can be of forest, bushes, shrubs. It is not spaced and cared for by man.

ACTIVITY

1. Mention any four examples of natural forests in Uganda. (biggest in Uganda and central Uganda)
2. Outline at least two factors which have led to Mabira forest to decline in size.
3. What type of wood is obtained from natural forests and the products obtained from hardwood.

4. How are natural forests useful to wild animals? (homes and food)
5. Economic values of natural forests to a country (expected answer)
 - Attract tourists
 - sources of wood.
6. Features in forests which attract tourists.
 - Beautiful types of trees.
 - wild animals
7. Economic, social and political value of swamps to a country.
 - serves as boundaries
 - source of craft materials
 - source of building materials
 - modify the climate by helping to form rainfall

PLANTED VEGETATION.

1. Defined as the plant cover planted by man.
2. Planted vegetation can be planted forest, plant flowers. It is spaced and in most cases one type of trees e.g. pines, cedar, eucalyptus, brush trees.

ACTIVITY

1. Mention any four examples of planted forests. Lendu is the largest planted forest in Uganda.
2. Name the types of trees which occupy planted forests.
3. Where the following planted forests located in Uganda.
 - zoka
 - Agwata
4. Planted trees produce soft wood. Name at least four wood products obtained from soft wood.

5. Why is the government of Uganda encouraging the planting of trees?
6. Why are there many planted forests in rural areas as compared to urban area?
 - There is vast land in rural areas as compared to urban areas.
7. Write in full NFA.
8. How is NFA important to our environment?
9. Differentiate between planted forests from natural forests.

MAJOR ETHNIC GROUPS IN UGANDA.

1. Ethnic groups are made up tribes. Tribes are made up of clans. A clan is the smallest unit of a tribe. A clan is managed by a clan leader. Clans can have totems which can be plants or animals like mushrooms or leopard.

ACTIVITY

1. What do clan leaders share in common?
 - They believe in the same totem.
 - They have particular names.
 - They don't eat that particular totem.
2. Why don't clan mates don't eat a particular totem? It is a sign of respect.
3. Identify any two duties of a clan leader.
4. What are Ethnic groups?
5. What do ethnic groups share in common?
 - have the same origin and almost speak similar languages eg Baganda, Basoga, Banyoro.
6. What are the ethnic groups in Uganda?

- Bantu	- Hamites
- Nilotics	- Cushites
- Nilo Hamites	- Sudanic race.

7. Use the map to show their origin (cradle lands) their routes when migrating and settlement.
8. Discussion about the tribes which specifically make up each ethnic group.

THE BANTU MIGRATION IN UGANDA.

1. They were named as the Bantu due to the common syllable “NTU” they used. They came from Cameroon high lands, through Congo (Katanga region) and entered Uganda through the Western direction. It was the first or earliest group to enter in Uganda.

ACTIVITY

1. How were the Bantu organized in these following aspects:-
 - (a) socially
 - (b) politically
 - (c) economically
2. They were named according to the places where they settled. How were the Bantu named having settled:-
 - (a) Near lakes and rivers
 - (b) On highlands e.g. Mt. Elgon
3. Why did the Bantu decide to settle in these areas?
4. What was the chief economic activity of the Bantu?
5. Besides crop farming, mention other two economic activities the early Bantu were involved in.
6. Give the way how the following areas were affected after the migration of the early Bantu:-
 - (a) their cradle lands
 - (b) In the new areas where they settled.
7. Give at least four reasons why the Bantu people migrated from their cradleland.
8. Which factor made the Bantu live a settled life?

9. Why were the Bantu able to form kingdoms?
10. Define rural-urban, urban-rural, urban-urban, rural-rural migration and their causes.

THE NILOTIC MIGRANTS

1. Originated from Sudan which is currently South Sudan from Barhel-Ghazel, followed the south and entered Uganda in the north.

ACTIVITY

2. Where did they settle as they entered in Uganda?
3. What was the main occupation of these people?
4. Specific reasons for their migration.
 - Being cattle keepers, they were searching for enough grazing land.
5. Discussion about their division:- Why they were named according to the places where they settled.
 - Plain Niloties - those who settled on plain lands
 - River-lake Nilotes - settled near lakes and rivers
 - Highland Nilotes – settled on highlands
6. There was variation of economic activities depending on the areas where they settled.
7. Mention the tribes in Uganda who comprise of the following nilotic divisions:-
 - (a) Highlanders
 - (b) River –Lake
 - (c) Plain Nilotics
8. Using the map of Uganda, clearly show their settlement areas.

CULTURE

1. Culture is defined as the way how people live and behave in a given society. Culture is as old as the early members of our society. We have material and non-material culture- language. Regallias.
2. Culture is composed of languages, Music, dance, staple food eaten, dressing, styles of the traditional buildings, weddings, introductions, last funeral rites, way of worshipping ...

ACTIVITY

3. How is culture useful in our societies?
 - It helps members of the society to behave well.
 - It helps to keep law and order.
 - Cultural practices are sources of tourism attraction.
4. A belief is a way of feeling that is true or right about something. Example – no sitting on cooking stones, on mortars and grinding stones.
5. How can culture be promoted in schools? Through traditional dances, folk songs, legends, riddles ...
6. How can a higher level of education affect the culture of a given society?
7. How did the missionaries and Arabs influence the culture of a given society?
8. How did Jesus fulfill the culture of the Jews?
 - He accepted to be circumcised.
9. Outline the disadvantages of culture to a modern society (Malnutrition, under development).

LEGENDS (BUGANDA AND BUSOGA /BAGISHU)

1. Legends are stories of long ago told by our ancestors. Some legends seem to be false but have great teachings and promotion of morals. These stories are about famine, wars, drought ...

ACTIVITY

1. How did Kintu gain from his cow for survival?
2. In which way was the first Muganda relate to:-
 - Gulu and Kaikuzi?
3. Why didn't Gulu support Nambi getting married to Kintu? Kintu was a poor man.
4. Name the three tasks Gulu gave to Kintu?
5. Why did Gulu give Kintu a number of tasks?
6. Define the term dowry.
7. Why do most tribes in Uganda encourage and support dowry payments?
8. What does the term Walumbe mean?
9. How was Walumbe a threat to the family of Kintu and Nambi?
10. In which way did Kaikuzi help the family of Kintu and Nambi?
11. Name the place where Walumbe hid.
12. From which mountain did the first Bagishu come from?
13. Name the two descendants of the Gishu race.

THE LEGEND OF THE SPEAR AND THE BEAD.

1. This legend comes from the northern region of Uganda among the Acholi. It come from the family of an old man Orum, who had his two sons Gipiir and Labong.

ACTIVITY

2. Why is Labong said to be a person who was brave in this Legend? How threw a spear to an elephant which went with a spear.
3. How did Labong help Gipiir to find the lost spear among the many elephant?
4. What caused the separation of the the two brothers?
5. How did Gipiir behave cruelly to his brother?
6. Name the tribes which exist today which were created by the two brothers.
7. What lesson do you learn from the Legend of the spear and the bead?
8. Give any two reasons why many families have separated in Uganda.

ECONOMIC ACTIVITIES IN OUR COMMUNITY.

1. Economic activities are activities done to get money or earn a living. Some economic activities are done by professionals after training while others require unskilled labour.

ACTIVITY

2. Outline the challenges facing people when carrying out economic activities.
 - Lack of enough capital
 - Lack of enough skilled labour
 - delayed payments
 - High tax charges
 - Insecurity in some area
 - High charges on rent
3. Factors which favour economic activities are almost the opposites of the enumerated factors.
4. How does the government gain from the economic activities done by people?
 - Government gets raw materials
 - Government collects revenue from them
5. Specific areas where such economic activities are done.

Discussions about the titles given to people who carry out economic activities e.g. lumbering.

GENERAL ECONOMIC ACTIVITIES IN OUR COMMUNITY.

1. There are a number of economic activities done in our community.
2. These economic activities include:-
 - Crop farming
 - Lumbering
 - Animal rearing
 - Charcoal burning
 - Industrialization
 - Tourism
 - entertainment
 - tailoring and wearing
 - trade
 - fishing
 - mining
 - brick making
 - modeling
3. Crop farming is Uganda's chief economic activity. Discussion about the traditional and non-traditional cash crops, challenges, benefits, agro-based industries, beverage crops, how it creates employment, mixed farming, mechanical farming, poultry
4. Craft making is the using of hands and have special skills to make things like balls: ropes, mats, clothes, baskets. Its significance in schools. Sources of raw materials and products eg fibres – balls.
5. Brick making, how it can support development, ways how it can affect the environment.

OTHER ECONOMIC ACTIVITIES

1. Trade is the buying and selling of goods. We have local trade and international trade. (definition)
2. Outline the factors which can support local trade. (security, low taxation, good transport, ready market ..
3. Reasons why countries trade with each other (foreign / international)
4. Suggest at least two factors which can support international trade; Good relations.

5. How can good banking system support trade? Mining (minerals, stones, sand)
6. How can stone crushing be useful to builders, road construction, symbol for a quarry and its dangers to the environment?
 - Mining areas Albertine region, Lake Katwe, Hima, Tororo (Osukuru), Mwadui Shinyanga, Katanga region, copper belt, Niger delta, Witwaterrand, Kimberly, Natal, Kilembe mines, Lake Magadi ...
7. Transport (boda boda cyclists) - Definition of transport, advantages and disadvantages of using boda bodas over other means of transport.
 - Why they are encouraged to wear helmets and reflectors jackets and how they are useful to taxis.
 - Why should boda bodas be reduced in towns?

OTHER ECONOMIC ACTIVITIES IN OUR COMMUNITY.

1. **FISHING** - Defined as the catching of fish from water bodies. These water bodies where fish is caught are called fishing grounds.
2. Examples of fish caught in Uganda (commonest and biggest)
3. Why is fishing called an economic activity?
4. Why is there not fishing done in Lake Katwe; L. Mburo?
5. Why some lakes like Nakuru attract many tourists?
6. Discuss the challenges facing the fishing industry and how the government and the ministry of agriculture, Animal industry and Fisheries has solved these challenges.
7. How does fishing create employment to people?
8. How has lumbering supported the fishing industry (case study – Mangrove forests)
9. How can fish smoking gradually result into environmental degradation?

10. Methods of catching fish in Uganda outside it.
11. How can fishing result into industrial growth?
12. How the presence of large fish can be a threat to the young fish.
13. Methods of preserving fish and why modern methods of preserving fish are not common in rural areas.
14. Factors favouring modern methods to be used effectively on Lake Victoria.

FACTORS HINDERING ECONOMIC ACTIVITIES.

1. Some people would like to perform certain activities but fail and others are done in a way which is prevailing (not pleasing).

ACTIVITY

2. Why some people fail to perform economic activities.
 - Due to sickness or general weakness.
 - Due to laziness
 - Some people are unskilled.
 - Due to ignore.
 - Due to bad weather conditions.
 - Due to insecurity in the area
 - Due to religious influence
 - Due to shortage of land
3. A guided discussion on how each named factor can prevail people from performing the specified economic activities.
4. Giving especially specific areas and examples where each factor is applicable in Uganda. E.g insecurity has discouraged some people from mining.

SOCIAL ACTIVITIES IN OUR COMMUNITY.

1. Social activities are the activities done to unit people of an area, clan, family and friends.
2. Examples of social activities done in our community;
 - wedding
 - introduction
 - naming children

- twin celebrations
- last funeral rites
- burial
- circumcision

ACTIVITY

3. Identify any three sorrowful social activities done in our community.
4. Write down at least two joyful economic values of social activities.
5. Name any two joyful social activities done in our community.
6. Mention any two tribes in Uganda which practice circumcision as a cultural practice.
7. Why is the ministry of Health against circumcision as a cultural practice?
8. Besides uniting people what are the value of performing social activities? (Peace / co-operation)

SERVICE CENTRES, SERVICE PROVIDERS AND SOCIAL SERVICES.

1. A service centre is a place where people get the services they need. A service provider is a person who offers services to the people.
2. Social services are services provided by the government, individuals and organization.

ACTIVITY

3. Examples of social service centres.

- schools	- barracks	- salons
- hospitals	- police stations	- banks
- radio stations	- petrol stations	- markets
- churches	- prison centres	- mosques
4. Name the services people obtain from the following social service centres:-

a) Schools	- education	c. Banks	- banking
b) Hospitals	- health	d. barracks	- security

5. Examples of people who provide services to the people in the community.
- a.. schools - teachers, secretaries, askaris, matrons
 - b. Hospitals - doctors, nurses, dentists
 - c. churches - reverends, pastors, Bishops
 - d. Banks - bank manager, guards, cashiers

COMMUNICATION

1. Communication is the sending and receiving of messages. Can be done in a practical way, the teacher sends the message, children receive and then respond.

ACTIVITY

- 2. Define the term communication.
- 3. What are verbal communication?
- 4. Define nonverbal communication.
- 5. Give examples of verbal means of communication.
- 6. Give examples of non-verbal means of communication.
- 7. Ways of how people communicated – long ago used to communicate.
 - Using drums, ringing bells, blowing horns, mouth to mouth, smoking, alarming ...
 - advantages and disadvantages of traditional means of communication.
- 8. Modern means of communication. - letter writing - using magazines
 - telephoning - telegrams, computers, telefax, televisions, news papers.
 - How are modern methods are better than the old methods of communication?
- 9. How can good communication promote the following:-
 - trade
 - security
 - health

TRANSPORT (Road transport)

1. Transport is the movement of people with their goods from one place to another. Transport has different means and types.

ACTIVITY

2. Mention any four types of transport.
3. Give the advantage of each type of transport.
4. Write down the disadvantage of each type of transport identified.
5. Write down any three means of water transport, Yatch, Ship, Ferry, Boat, Canoe, Dhoes ...
6. Mastering the means of transport by associating them with diagrams.
7. Name the types of roads (tarmac and murram)
8. How do murram roads affect trade? (slippery during rainy seasons and dusty ..)
9. How are feeder roads important to local traders?
10. Ministries responsible for main and feeder roads.
11. Why are pedestrians advised to use the right hand side of the road?
12. Why is the road network not well develop (DRC, Rwanda, Ethoipia, Lake Kyoga, Kabale ...)
13. How can a good transport network promote trade, security and tourism?
14. Donkey rearing in Kasese, Bundibugyo – economic and social values , why are they used in hilly areas?

AIR TRANSPORT

1. Aeroplanes and aircrafts are used in air transport. Airports and airstrips are used. Using an Atlas, children mark these African airports.

ACTIVITY

1. Why do pilots need a compass in their activity?
2. Why is the significance of a wind sock at an airport?
3. Why do few people use aeroplanes?
4. How is Entebbe an important place in Uganda?
5. Mention any three advantages of air transport.
 - It is a fast means (type) of transport.
 - It is not affected by highway robbery.
 - It is not affected by physical features like forests.
6. Disadvantages of air transport.
 - It is very expensive in terms of costs.
 - It does not offer door to door services.
 - Great loss is incurred in case of an accident.
7. Why is the distance covered by planes shorter than means of road transport even though one is using the same point?
8. Measuring distances of plane flights in tent-miles and converting it to kilometers.
9. Besides being used for transport, how can aeroplanes be useful in the country.
 - Helicopters can be used for spraying.
 - Jets can be used for fighting.
 - planes can be used in advanced countries to spy.

WATER TRANSPORT.

1. It is done on water bodies such as lakes, seas, rivers and oceans. The following means are used yacht, ships, boats, dhows, canoes ...

ACTIVITY

1. Disadvantages of water transport e.g. it is the slowest type of transport.
2. Outline any four advantages of water transport.
 - It can be used to carry heavy goods.
3. Reasons why some water bodies are not used for transport / navigation.
 - Due to the presence of sudd, water weeds, underlying rocks, water falls, rapids, big sea animals like hippos.
4. Specific areas where water transport is difficult
 - Between Lake Victoria and Lake Kyoga.
 - On Lake Kyoga - It is swampy and is it so?
5. Economic value of waterfalls though they affect water transport.
6. Why water transport is not commonly used in Karamoja region
 - Lack of permanent water bodies.
7. Product and raw materials transported from Kalangala to Port Bell.
 - Oil palm, fish, timber
8. Use of Atlases to mark the inland port on Lake Victoria, Tanganyika, Kyoga and Albert.

RAILWAY TRANSPORT.

1. The type of transport is railway and trains act as means of railway transport.

ACTIVITY

1. Draw a symbol of a railway line.
2. Why is railway transport not well spread in most of our communities?
3. Advantages of railway transport.
 - It can be used to carry bulky goods.
 - It is not affected by traffic jam.
4. Disadvantages of railway transport.

- Railway lines are expensive to build.
 - It can not offer door to door services.
5. Why was the Uganda railway extended to:-
 - Jinja, Kasese, Namasagali, Arua / West Nile
 6. The Tanga Karogwe railway line. Its route and reasons for its construction.
 - Its funding, provision of labour and results.
 7. The Tazara railway line . Its route and reasons for its construction.
 - Discussion about the goods transported.
 8. Why did the Uganda railway delay in central Kenya, Tasavo and results after its construction.
 9. Roles played by Patterson, Macdonald, Mackinnon
 10. How did the building of the Uganda railway help to stop slave trade.

SECURITY SERVICE IN OUR COMMUNITIES.

1. The following people provide security in many levels:- Security is needed at home in social service centres.

ACTIVITY

2. Examples of people who avail us with security.

- children	- parents	- matrons in school
- dormitory wardens	- school gate keepers (askaris)	
- Bank guards,	- secretary for defence (L.C.!)	
- Resident District Commissioner	- Prison officers	
- police officers	- UPDF	LDU
3. Which ministry is in charge of the following security organs:- Uganda Peoples' Defence Forces, Uganda Police Force, Local Council, Prisons.
4. Ways of living in peace.

- observing rules and regulations respecting each other, respecting other eg the lame, playing with others.
- 5. Explanation on how the mentioned can result into peace in the community.
- 6. How children can live peacefully with parents and teachers.
- 7. Importance of living peacefully with others.
- 8. - Children respect elders, people don't fight, wrong people are easily identified, promotes co-operation, developments,

THE UGANDA POLICE.

The Uganda police is headed by the Inspector General of Police and managed by the Ministry of Internal Affairs.

ACTIVITY

1. The Departments of the Uganda Police (sections)
 - Traffic police
 - Dog section
 - Criminal Investigation Department (C.I.D)
 - Fire extinguisher (brigade)
2. Problems faced when performing its duties.
 - Ignorance of the people about the law.
 - Difficulty in transport and communication.
 - Riots or demonstrations involving their death.
 - Mob justice which kills evidence.
3. Ways how the police keeps peace in the community.
 - Arresting suspected law breakers.
 - Controlling riots and demonstration
 - Stopping big fires/ traffic and escorting dignitaries.

4. Examples of people who cause road accidents.
5. How does the police help the Uganda prisons?
6. How does the police help the judiciary to do its work effectively?

CHILDREN'S RIGHTS.

1. Who is a child?

A child is a citizen of Uganda who is below eighteen years of age.

2. All children in a country must share the same rights regardless of their differences in sex, age differences home / family background, marital status of parents, economic gaps, tribes, religious and customs ...

3. The following are the rights of children:-

- Right to security.
- Right to have a name.
- Right to education (basic)
- Right to belong to a family.
- Right to play but under protections.
- Right to express their opinions
- Right to play.
- Right to health
- Right to protection (children with disabilities)
- Should be treated equally with other children.
- Right to basic education.
- Right to leisure which is not harmful
- Right to eat.

IMPORTANCE OF CHILDREN'S RIGHTS.

1. What are children's rights? These are the rights which children must be given in order to protect their interests and needs.
2. General importance of children's rights.
 - It enables parents to bring up children as responsible people in the community.

- It enables children to be disciplined.
 - It reduces on the cases of child abuse.
 - It helps to reduce of the increasing number of street children.
 - _ It reduces on the reported cases (crimes) to locals authorities and the police.
3. Areas where children are denied their rights.
 - In their homes.
 - In the school where they go for education.
 4. Discussion on how the abuse of children's rights can deny bringing up children responsibly, promote indiscipline, rise up more cases of street children, and lower up cases of street children

CHILD ABUSE, ITS CAUSES AND SPECIAL EXAMPLES.

1. Child abuse refers to ways how children's rights are denied.
2. Examples of people who carryout child abuse.
 - Teachers especially at school
 - Parents especially step parents
3. Causes of child abuse.

- Broken homes	- Indiscipline of children
- Great alcoholism.	- Orphanage (death of both parents)
- Poverty in homes.	- Wars (insecurity in an area)
4. Explanations as guided by the teacher to tell how each named factor can result into child abuse. E.g. - Poverty - poor parents fail to provide their children with the basic requirements like food, clothes with the basic requirement like food, clothes and fail to meet fees.
5. - indisciplined children always make the anger of elder rise and react badly e.g. beat them badly.

- With great alcoholism, drunkard parents can beat their children badly, chase them away from their houses or fail to buy what children need.
- With broken homes, children remain unattended to.

EXAMPLES OF CHILD ABUSE TO EFFECT:

1. Child abuse comes externally from the child, as done by the people in the environment or at times the child's bad behavior contributes it.

ACTIVITY

2. Examples of child abuse and neglect.
 - Making a child to steal.
 - Touching a child's private parts.
 - Refusing a child to pray or play.
 - Giving a child cruel punishments.
 - Child battering as done by elders and teachers.
 - Exposing a child to bad pictures. (their sources)
 - Denying a child by the parent.
 - Practising child labour and defilement.
3. Effects of child abuse.
 - It makes a child to lose confidence in adults.
 - It suffocates a child's emotions.
 - It can lead to death of children.
 - It results into body deformity.
 - It can result into imprisonment.
 - Mob justice of the offender, resulting into death.
 - Abused children are always segregated.
4. Organizations in Uganda attached to child abuse.

- Hope after rape.
- ANNPCAN

PREVENTION OF CHILD ABUSE.

1. The reason for preventing child abuse is to protect and save children against any harm, or death which can come gradually or instantly.
2. Child abuse can be prevented in the following ways:
 - (a) Parents should always be role models to their children.
 - (b) Children should know their right.
 - (c) Children should be well behaved.
 - (d) Adults should be sensitized about the importance of children's rights.
 - (e) Report of child abuse should be reported to the police and local council committees.
 - (f) Children should be loved and protected.
 - (g) Leaders should be strict to people who practice child abuse.
 - (h) Parents should exhibit the same love to their children.
3. A guided discussion on how each factor enumerated can help to prevent child abuse in the community.
4. How can child abuse affect the child's habit and academic performance?

CULTURE AND GENDER IN OUR COMMUNITY.

1. Culture is the way how people live and conduct themselves in a society or community. Culture differs from tribes to other tribes.

ACTIVITY

2. Cultural practices done in the community.

- marriage
- naming
- introduction

- twin celebrations
- music and dance
- staple food eaten
- greeting
- burial
- taboos
- language
- dressing
- circumcision

3. Explanation why each practice is done. Eg Greeting is done as a sign of respect. (kneeling). Circumcision is done to show that the boy has advanced from childhood to adult hood.

- Last funeral rites are done to show a heir to the dead adult.
- Why are people below 18 years not allowed to marry?
- Factors considered, before choosing a pattern for marriage – behavior, home back ground ...
- Why do some tribes in Uganda perform tattooing?
- Courtship is when people who intend to marry meet and talk about themselves eg religion, clan, ...

TABOOS AND IMPORTANCE OF CUSTOMS.

1. A taboo is a cultural or religious custom that does not allow people to do, use or talk about.
 - A taboo sounds evil if it is done by a member of the socially culturally or religiously e.g. when a Moslem eats pork or when a brother marries a sister.

Cultural and religious taboos.

- Some Christians don't eat meat during lent.
 - It is taboo one to eat his or her totem.
 - Moslems don't eat pork and drink alcohol.
2. Importance of customs.
 - They create cultural heritage and belonging.
 - It can act as a tourist attraction. (People are attracted to come and learn the customs o others.

- They help to identify certain people.
- For prestige and self esteem. (People are admired and respected.).
- Customs spell out gender roles or a particular society. (what women and men do).

ACTIVITY

1. What is gender equality?

It is when people of different sexes are treated equally.

2. What is women emancipation?
3. Ways how children are treated equally? (for distribution of work, basic needs, fairness ...)

WAYS OF INSTALLING CULTURES IN THE COMMUNITY.

1. Culture being an important aspect in the society we must find ways of installing it in the people.

ACTIVITY

Ways of promoting and preserving culture.

- a) Through music, dance and drama. (teaching others songs related to the tribe activities e.g. hunting.
- b) Through sharing roles e.g. men build granaries. Women cook food, men make bricks, milking done by men.
- c) Through practicing traditional education eg people are told legends to know their origin and discipline.
- d) Through documenting – written information to people.
- e) Through initiation like circumcision to Bagishu.
- f) Installation of traditional leaders e.g. attending the coronation of the king.

- g) Attending funerals, their heir is shown and the spirit of the dead is prevented from coming back to disturb the living.
- h) Respecting cultural norms; young ones learn the value of greeting, treating visitors, marriage ... Planting medicinal trees as a health traditional practice.
- More discussion about how each is done and its significance to the society.

REGIONAL ORGANISATIONS

These are organizations which unit countries close to each other socially, economically and politically.

- A Common Market is when goods and service are able to move freely
1. Conditions necessary for their success.
 - Good political climate of the regional countries.
 - Countries should be geographically linked.
 2. Reasons for economic integration.
 - It promotes trade in a region. (widens markets)
 - It promotes effective utilization of resources.
 - It leads to development of infrastructure.
 - It promotes industrial growth.
 - It aids easy movement of goods.
 - It lowers interdependency on overseas countries.
 - It reduces on trade barriers.
 - It strengthens peace and security in the region.
 3. Challenges regional organizations face.
 - Production of similar goods – political differences
 - Language barriers - competitions with other regional organizations
 4. Design solutions to the enumerated challenges.

5. How do member states gain from regional organizations?

- Get goods they can't produce.
- Creates markets for goods
- creates employment
- Member countries borrow money
- It promotes co-operation
- It reduces on smuggling
- Improves on health and education

EAC - FORMATION, MEMBERSHIP AND BENEFITS.

1. EAC in full - East African Community was formed in 1967.
2. Pioneer member countries (Uganda, Kenya and Tanzania)
3. Who were the Presidents of E. A during its formation?
4. Where were the headquarters and secretariat of the EAC established?
(Arusha in Tanzania)
5. Reasons for its formation.
 - To promote unity and co-operation among countries.
 - To promote trade within the region.
 - To allow easy movement of goods and service exchange.
 - To run the former bodies of the EA Common service organization.
 - To create a forum to discuss regional politics.
6. Benefits of the East African Community. (Picked from some of the regional benefit)
7. Organisation and services offered.
 - EAC railway co-operation. Nairobi
 - EADB - located in Uganda Kampala
 - EA Literature Bureau - for published books. Nairobi.
 - EA Railway Co-opetation Nairobi
 - EA Customs and excise Department - Mombasa
 - EA Examination Council - Nairobi, Civil aviation school - Soroti

- Veterinary research - Muguga Marine
- Fisheries - Zanzibar

CHALLENGES OF THE EAC DECLINE AND REVIVAL.

1. As compared to all regional organizations, the EAC has the following challenges:-

- Lack of enough funds
- Political difference
- Foreign influence
- Dictatorial leaders eg Amin
- Internal and border conflict
- Bad policies

2. The EAC collapsed in 1977. The then presidents were Kabirage Nyerere, Idi Amin and Jomo Kenyatta.

Reasons for its decline:

- Differences in political ideologies among leader
- Kenya benefited more than Uganda and Tanzania.
- Misunderstandings among the Heads of State
- Unequal distribution of resources.

3. Explain how each factor contributed to the decline of the East African Community.

4. Revival of the East African Community. (Re-birth)

- It was revived on 30th November 1999 by Yoweri Museveni, Benjamin Mkapa and Daniel Arap Moi.

Reasons. Promote unity and co-operation, Allow free movement of goods, have a common market, reduce on charged taxes, Allow people access services.

5. New member states Rwanda, Burundi and South Sudan, how they joined and reasons why they joined the EAC.

- Why countries like Ghana, Nigeria are not in the EAC.

EAST AFRICAN COMMUNITY SYMBOLS.

1. Begin with school symbols, National symbols for Uganda, how useful are symbols to the school and a country like Uganda and their components.
2. East African Community flag. The order of the colours of this flag, their significance (Blue - waters of L. Victoria, Red - brotherhood of EA ...)
3. East African emblem. (observing the features on it and their significance - map of East Africa but Rwanda, Burundi and South Sudan missing, the industrial wheel, olive leaves the words JUMUYIYA YA AFRICA MASHARIKI and a hand shake.
4. East African Community anthem (song for the community, its stanzas and occasion when it is sung eg parliamentary sessions, EAC gatherings, state burials, school assemblies
5. Others are Motto for the community, East African Community coat of arms and the constitution.
6. Organs and their roles. The Summit (Heads of state) Council of Ministers (implement programs) EAC court of justice (promote human rights) EAC Secretariat (runs the day to day affairs) EALA Acts as the law making body and co-ordination committees.

DETAILS OF THE EAC MEMBER COUNTRIES.

1. Maps showing the geographical location of the EAC member states using Atlas.
2. Uganda - Capital city, current president, her neighbours in all directions, how it solves the problem of being land locked, brief discussion of the economic activities, prominent physical features.
3. Kenya - Capital city, historical background, current president, her neighbouring countries, seaport, benefits from her seaport, her economic activities, the main physical features eg Indian Ocean.

- genocide of 1994, how it solves here challenges as a land locked country, her economic activities are done and relief features.

5. Tanzania - Capital city, historical background as Tanganyika, her neighbor, seaport, features like Kilimanjaro, R. Ruvuma and economic activities.

6. Burundi and South Sudan - Capital cities, leadership, leadership, why South Sudan broke off from Sudan.

ORIGIN OF MAN (SOURCES OF HISTORY)

- improving on the future.

2. Outline and explain the following sources of history

- Oral history, Written history, archaeology, Anthropology and linguistics
- Explain the identified sources of history.

- ### 3. Sources of oral history (why it is called an oral history and their significance)

- Legends
- Music
- Reading from historical books
- Riddles
- Proverbs
- Sayings and Rhymes

- #### 4. Advantages of oral history.

- It is cheap, crates for the blind, illiterates, promotes respect to elders, encouraging thinking, develops feelings

- ## 5. Disadvantages of oral history.

- Depends on one's memory, information can easily be changed, it phases out in future, information scares the children, bad information is reserved.

6. Written history - text books, computers, newspapers, reports, magazines, journals. Advantages - can last longer, it is accurate when events occurred used for future references.

Disadvantages - expensive, caters for literates

7. Value of studying man's origin - Early man's style human known, development of man known, nature of man appreciated.

ARCHAEOLOGY

Archaeology is the study of remains of the early man. The remains of the early man are known as fossils. Fossils are dug from underground – Excavation These remains include bones, weapons, rock paintings.

ACTIVITY

1. Who is an Archaeologist?
2. Give the role of these Archaeologists.
 - Doctor Loius Leakey (discovered oldest skull) at Olduvai Gorge in Tanzania named Zinjanthropus.
 - Doctor Posnansky, Chitik, J. S Kirkman, Doctor Richard Leakey.
3. Why is Africa (Tanzania) called the cradleland of man?
4. How important is a Museum to a country like Uganda? We find art, cultural and historical items
 - Source of employment.
 - Helps to know the origin of man.
5. Archaeologists face these problems. It is expensive, tiring to be done, lack of enough skilled manpower, difficult to locate the sites.
6. Map of East Africa showing stone age sites.
 - Nsongezi, Bigo, Sango Bay, Magisa, Paraa, Nyero (Uganda)
 - Olorgesale, Lewa, Yala, Alego, Kanak, Rusinga, Kariandusi, Apis rock, L. Eyasi, Kisese, Chseise, Isimila, Ganisi (Tanzania)
7. Value (Academic, employment, origin of man, income)

STAGES OF THE EARLY MAN AND HIS ACTIVITIES.

He was called an early man, stone age man and the period as the stone age period.

ACTIVITY

1. Name the three periods of the early man (Old, Middle, New)
2. Ways how man got food (Gathering/ hunting) digging water.
3. Characteristics of the early man (lived naked, hairy body, lived nomadic life, used simple tools)
4. Places where he stayed (bushes, river banks, on trees)
5. Discoveries (Middle, - fire discovered) New - crop farming.
6. Significance of crop farming and fire to man.
7. Challenges the early man faced (Wild animals, bad weather)
8. Tools used by the early man in hunting (bolas, hand axe, bone needle, spear)
9. Domesticating a dog was useful to the early man (Give at least two ways).
10. Ways he killed the animals, Trapping, spearing ...
11. Reasons why the early man lived near water bodies.
 - Get water for drinking, get fish, trap water animals.

THE IRON PERIOD

It is period which followed the stone age period. Iron smelting in Africa started at Meroe.

ACTIVITY

1. Why was the iron period named so?
2. Why did the early man stop using stone tools after the discovery of iron? Iron tools were stronger than stone tools.
3. How did the discovery of iron help to boost on the production of food?
4. How did the discovery of iron improve on the early man's security?
5. Who is a black Smith?
6. How is Black Smithing useful to man today?

7. How did the skill of iron smelting come to exist in Uganda?
8. Examples of tools made out of iron.
 - Knife - hoe - axe - panga
9. How did the discovery of arrows and bows improve on the well being of the early man.
10. How does man today continue using iron tools in the day to day activities.

THE CHWEZI DYNASTY.

Nobody knows where they came from and they just left unknowingly. They left their footmarks at Sembabule at Bigobyamugenyi. Their first king was Ndahura and their last king was Wamara.

General contributions of the Chwezi in Uganda.

- Introduced long horned cattle
- Introduced the idea of bark cloth making.
- Introduced coffee cultivation.
- Introduced a centralized monarchy administration.
- Built Bigobyamugenyi; which attracts tourists.
- Introduced local chess / board game / mweso game.
- Introduces salt mining.
- Built large reed palaces.
- Introduces royal regalia.

1. What are Regalia? Special objects used by kings.

Examples of royal regalia.

- Royal drums, royal crown, royal gown, royal spear.

2. Categories of their contributions into social, political and economic contribution.
3. Factors for the collapse of the Chwezi empire.

- Death of Bihogo, Luo invasion, outbreak of cattle and human diseases, famine, internal conflicts, too large empire, drought ...

THE FALL OF BUNYORO AND RISE OF BUGANDA.

Bunyoro Kitara was a large kingdom stretching from Western Uganda to eastern Uganda but declined. Buganda was a small kingdom only having Kyaddondo.

1. Factors why Bunyoro Kitara kingdom declined.

- It was too large to be administered.
- Due to internal conflict and power struggle.
- Leaders became rich and didn't care for the subjects.
- Loss of grazing land after Buganda taking over land.
- Attacks from Buganda.

2. What had made Bunyoro to expand?

- A well trained army (Abarusura)
- Got guns from the early traders
- Unity among the Banyoro.
- Enough supply of food.

3. Reasons for Buganda kingdom.

- Unity among the Baganda.
- Got guns from the Arabs.
- Strong kings and good leadership.
- Buganda being in a strategic position.
- Enough food due to the fertility of the soil.
- A centralized system of administration

4. How each factor led to its expansion?

PROMINENT KINGS IN UGANDA.

The prominence of the kings in Uganda / East Africa was measured depending on the extra order in any thing: they did during their time of service.

ACTIVITY

1. Mention any four characteristics of kingdoms.

- Hereditary rule, king is the supreme leader, expand through wars, have regalia, division of people in classes e.g. Balangira and Bakopi.

2. Disadvantages of having kingdoms.

Division of people, doesn't encourage democracy, unequal distribution of wealth e.g. land, tribalism.

3. Important kings in East Africa. (Nabong Mumias)

- Kamurasi – welcomed Speke, Abaduma (soldiers).
- Mirambo – leader of the Nyamwezi - Rugo - Rugo.
- Kabaka Ssuuna - welcomed the first Arabs 1844.
- Kabaka Mwanga - resisted colonial rule - exiled.
- Daudi Chwa - ruled as an infant king and was the king of Buganda during the signing of the 1900 Buganda agreement - (Apollo Kaggwa Johnston)
- Muteesa 1 - invited and welcomed the European Missionaries in Uganda (reasons for invitation) executive powers. (Obote as the Prime Minister had the power).
- Current kings in Uganda and chiefdoms.

4. Reasons why some tribes did not form kingdoms.

EARLY TRADE IN EAST AFRICA.

The long distance trade was carried out between the people at the coast of East Africa and far interior. It was named so because of the long distance walked with their goods.

Name the tribes involved in the long distance trade. Nyamwezi, Yao, Kamba, Kikuyu, Banyoro, Baganda.

1. The foreigners who were involved in the long distance trade were the Arabs and Indians.
2. Items of trade involved in the long distance trade included the Arabs, guns, salt, hides and skins.
3. Even honey, wax, iron ore, rhino horns, clothes, glass, plates, beads and ornaments.
4. Effects of the long distance trade.
 - Promoted slave trade. Families broke up. Tribal wars, A lot of wealth taken, Some kingdoms became rich and expanded, Some towns developed, Depopulation, Intermarriage and formation of new languages. It led to the spread of Islam. New trade items were introduced.
5. What is barter trade?
6. Why people exchanged goods for goods? (Banyans)
7. Advantages of barter trade.
 - Didn't involve the use of money, Promoted friendship, People got the exact goods they wanted.
8. Disadvantages of Barter Trade.
 - Difficult to move with bulky goods, no standard measure, not suitable for perishable goods, divisibility of goods.

ARAB TRADERS IN EAST AFRICA.

1. They were the first foreigners to come in East Africa. They mainly came from Saidi Arabia and Persia in Asia.
-
1. Name the water body the Arabs crossed to East Africa.
 2. What were the dhows in relation to Arabs?

3. How useful were the Monsoon winds to the Arabs?
4. Why were the Monsoon winds called trade winds?
5. Reasons for the coming of the Arabs in East Africa (came to trade, spread Islam and escape wars they had).
6. Positive contributions of the Arabs in East Africa.
 - Introduced new crops, New styles of dressing, zebu cows, new building skills, a new religion, guns for defence, built inland and coastal towns, dhows as a means of transport and new trade items.
7. Coastal towns the Arabs established at the coast of East Africa – Kilwa, Malindi, Sofala, Mogadishu, Lindi, Zanzibar (biggest) Tabora (inland) and largest.
8. Their contributions categorized into economic. (classes)
9. How did the Arabs and Indians promote trade?
10. Disadvantages of slave trade.
 - It led to massive death of people, Displacement of people, encouraged tribal wars, Families separated
11. How did slave trade come to an end? (treaties)
12. Why was it difficult to stop slave trade?
13. Ways how slave trade was got eg raiding, encouraging wars and captives were taken.
14. How did slave trade cause depopulation.

INDIAN TRADERS IN EAST AFRICA.

1. Indians came from India. They can also be called Asians. Most of them were traders.
2. How did the Indians come to stay in East Africa?
 - Came to build the railway line and stayed.

3. Give two reasons why the Africans were not used to construct the Uganda railway. (they were not skilled and did not want to leave their homes for so long).
4. Why is Aldina Visram still remembered in the economic history of Uganda?
5. How did the Indians promote trade in Uganda?
 _ Built shops, Introduced the banking system, Introduced new trade items, Bought goods from Africa.
6. Who were the Indian Coolies?
7. What were the Rupees in relation to the Indians?
8. How did the Banyans contribute towards the development of trade?
9. What agricultural role was played by Mehta and Madhavani? Established sugarcane plantations and sugar factories.
10. The Indians also built schools and hospitals.
11. More discussion about the current Indian foreign investors in Uganda (promoted the revenue of the country, created more employment to people.
12. Who is an investor?

1. Population can be associated to a number of events not only to people.
 Population can be to forests, schools,

ACTIVITY

1. Definitions of the population terms.
 - (a) Population (b) Population growth (increase of people (c) Population census (d) Population density (number of people living in an area per square km) (e) Population distribution (f) Population explosion (sudden increase of people as compared to the available resources)
 - (g) Over population (greater population in comparison to the available resources) (h) Under population (less people as compared to the available resources)

resources) (i) Sparse population (j) Optimum population (This is when the number of people in an area can be supported by the available resources (k) Mortality rate (number of people who die) Fertility rate (Average number of birth a woman bears in her reproductive period (l) Infant mortality rate (0 – 11 years' death goes high) (m) life expectancy.

2. Reference to areas in an area (Africa) where each is applicable.

3. Factors contributing to population growth.

- High birth rate _ High fertility rate , High migration rate in a country, - improved health conditions, - polygamy, - Early marriages

POPULATION CENSUS

General counting of people living in an area. It is done by the Ministry of Finance, Planning and Economic Development. Done after a decade.

ACTIVITY

1. How important are enumeration in population census.

2. Define the term census night.

3. Name the body responsible for population census.

- Uganda National Bureau of Statistics.

4. Information needed during population census.

– Name, Sex, Age, Tribe, Religion, Race, Type of housing, Level of education, Occupation, Marital status, Date of birth (each has a reason for demand).

5. Problems faced by Enumeration and reasons for census.

- Some people give wrong information, Bad weather, Language difficulty, Insecurity in some areas, Poor transport net work

6. What makes population census an expensive exercise?

7. Equipment needed by population census.

- Stationery (files, papers, pens) rain coats, gum boots, umbrellas)
- 8. Discussion about the significance of each of the named equipment.
- 9. How do the following affect population census?
 - Ignorance
 - Ignorance of the people

POPULATION DISTRIBUTION.

1. Population distribution is the way how people are spread in an area. Use of Atlas and maps in text books and discuss the population distribution.

ACTIVITY

1. Name the factors which influence population distribution in an area (Africa).
 - Fertility of the soil, - Favourable climate, - Presence of better social services, - The relief of an area (highlands in Rwanda – rocky), - Development of industries, - Natural disaster outbreak.
2. A guided discussion on how each enumerated factor can result in to population distribution E.g With industrial development, large numbers of people are attracted to go there seeking for jobs.
3. Calculation of population density.

$$\begin{aligned} \text{Population Density} &= \frac{\text{Total population}}{\text{Total area in sq. km}} \\ &= \text{Persons per sq. km.} \end{aligned}$$
4. Advantages of a large population.

Market for goods, cheap labour, high revenue from the taxes charged, reference to countries like Nigeria).
5. Disadvantages of a large population / even classes / land shortage / fragmentation / easy spread of diseases / environmental degradation / growth of slums.

WAYS OF CONTROLLING POPULATION GROWTH.

Following the dangers of over population and saving resources, population has to be controlled.

ACTIVITY

1. How can population growth be controlled in a country.
 - a. Promoting girl-child education. This helps to control population growth because future women won't be ignorant on high production of children.
 - Girls will stick on the books instead of getting married early.
 - b. Family planning - This enables parents to produce the number of children they can manage through using pills, condoms, coils and contraceptives.
 - c. Discouraging early marriages. Reasons why some parents force their children to get married at an early stage - poverty.
 - d. Encouraging monogamy. A man sticks to marriage to one wide instead of marrying many.
2. Advantages of family planning to parents.
 - It enables a parent to produce the number of children they can manage.
 - The parents remains strong, healthy and nice looking
3. Why is abortion not a legalized way of controlling population growth by the church and the nation?

MAJOR RESOURCES IN EAST AFRICA.

1. Components in our environment man uses to satisfy his needs. Resources can be natural, human made, renewable or non-renewable.

ACTIVITY

1. Define the following types of resources.
 - (a) Renewable
 - (b) Non renewable

2. Differentiate between renewable and non renewable resources in the environment.
3. Examples of natural resources in our environment.
 - Land - water bodies - vegetation - climate
 - Human beings - air - sun - animal - plants.
4. Outline the significance of each resource to man.
5. How can the above mentioned resources be kept free from destruction?
6. Why are the above resources known as natural ones?
7. Examples of man made resources.
 - Electricity - building - fridges - computers
 - Cookers - cosmetics - tiles - medicine
 - Oven - car - clothes - coffins ...
8. How are they useful to man?
9. Why are they called human made resources?

LAND AS AN IMPORTANT RESOURCE OF MAN.

1. Land is the most important resource of man because most human activities are done on it.

ACTIVITY

1. Why is land regarded as the most important factor of production?
2. Activities done on land can be social or economic ones.
3. Economic activities done on land.
 - mining - road construction - hunting
 - Tourism - industrialization - carpentry
 - Transport - recreation - charcoal burning
 - Trade - crop farming - entertainment
4. Social activities done on land.

- Wedding ceremonies
- Burial
- Introduction ceremonies
- recreation

5. Why some people own land especially in urban areas?
6. How does land support industrial growth?
7. How does land support effective delivery of social services?

CROP FARMING IN EAST AFRICA.

1. It is the back bone of Uganda. It is a source of income, employment, food, raw materials for the industries.
1. Define and give examples of traditional and non-traditional cash crops.
2. Major traditional cash crops grown in East Africa.
 - Cotton, coffee(Arabica, Robusta and clonal), tea, cloves, sugarcane, oil palm, sisal.
3. Using the maps in textbooks, Atlas to locate the places where each crop is grown eg. Oil palm at Kalangala, cloves at Pemba and Zanzibar, sugarcane- Kilombero, valley, Kakira, Sango bay ..., Arabica coffee, Mt. Elgon.
4. Conditions needed for the growing of each specified crop. E.g. sisal needs high temperatures, well drained fertile soils, well distributed rainfall.
5. Product obtained from the specified crops eg wool, cotton wool, cooking oil obtained from cotton.
 - Insecticides is obtained from pyrethrum.

6. General uses of each crop, sisal, used to make sisal sacks, ropes, carpets, car seat, sofa sets ...
7. Problems facing crop farmers (price fluctuation, pests and diseases, poor farming methods, lack of pests and diseases, poor farming methods, lack of enough input, climatic changes ...
8. Solutions drawn for the given problems.

FARMING METHODS USED IN EAST AFRICA.

1. The farming methods very depending on how much capital has and the size of the land.
2. Mixed farming (defined as growing of crops and rearing of animals on the same piece of land.
– Advantages of mixed farming and disadvantages of mixed farming.
3. Subsistence farming (rearing of animals and growing of crops for home consumption).
– Reasons why subsistence farmers at time sell some of their harvests.
4. Commercial farming (Growing of crops on a large scale purposely for sellin)
– Advantages and disadvantage of commercial farming.
5. Plantation farming (growing of crops on a large piece of land which is perennial.
– Advantages and disadvantages of plantation farming and how it supports industrial growth.
6. Ranching (defined as rearing of large herds of cattle for beef production.
7. Dairy farming (Rearing of cattle for milk and its products eg cheese.
– Factors which favoured dairy farming on the slopes of Mount Kenya. (cool climate and presence of enough pasture – Agro forestry)

THE TOURISM INDUSTRY IN AFRICA.

Tourism is the visiting of places of interest for study purpose of pleasure.

1. Give two reasons why tourism is called an industry. (source of income and employment)
1. Why is tourism called an invisible trade?
2. Major tourist attractions in Africa.
 - wild life - climate - physical features

- historical sites - museums - cultural diversity

3. Importance of the tourism industry.

- source of employment - source of income
- leads to the development of rural areas
- creates markets for locally manufactured goods
- promotes good relationship with foreign countries

4. Challenges facing the tourism industry.

- poaching - cannibalism - insecurity in some areas
- encroachment

5. Drawing solutions to the listed challenges.

6. Poaching done by poachers for meat of some animals, hides and skins.

7. Ways of controlling poaching.

8. Training more veterinary doctors to treat sick animals like anthrax.

9. Located tourism attraction centres pinned for the children to new places.

GAME ANIMALS AND THEIR CHALLENGES.

1. Animals in game parks have different habitats. Some live in forests, water, sand and grassland.

2. Problems facing the tourism industry / game animals.

- Uncontrolled bush fire.
- Poaching
- Cannibalism
- Game animal diseases
- Insecurity (wars)
- Shortage of water and pastures.
- Land encroachment.

3. Explanation on how each identified problem affects game animals such as uncontrolled bush fire can lead to death of animals, loss of pasture and destruction of animal habitats.
4. Disadvantages game parks to human life.
 - Eat people, over graze like elephants
5. Ways how following features attract tourists.
 - forests
 - culture
 - mountains
 - swamps
6. How are the following useful to tourists:
 - compass
 - good security

SET III



ELECTRONIC MEDIA

VOCABULARY

Study the meaning of the following vocabulary.

- Advertisement
- announcements
- Broad cast
- Eject
- Favourite
- Knob
- Chanel
- Volume
- Speaker
- Aerial
- Antennae
- News
- Entertainment
- Broadcast
- Pop
- Talk show
- Forecast
- Tune
- Media
- Moderator
- News caster
- Eject
- Extension cable
- Compact
- Disc
- Internet
- Air
- Live
- News reader
- News anchor
- Anchor
- Pop music
- Programme
- Record
- Studio
- tune

Write in full.

- | | | |
|-----------|--------------|---------------------------------------|
| 1. DVD | 7. MW | 13. Pop |
| 2. CD Rom | 8. DJ | 14. PCB (Printed Circuit Board) |
| 3. FM | 9. Vol | 15. PDA (Personal digital assistant) |
| 4. ICT | 10. VJ | 16. PC (Personal Computer) |
| 5. AM | 11. Internet | 17. PBS (Public broadcasting service) |
| 6. SW | 12. Email | 18. BBC |
| | | 19. UBC |

Use the correct form the words in brackets to complete the sentences.

1. I heard his death _____ on radio one. (announce)
2. Kakuru's _____ musician is the Late Paulo Kafeero. (favour)
3. The _____ on the television were boring. (programme)
4. The naughty boy broke all the radio _____. (knob)
5. Our teacher likes _____ to radio Paidha. (tune)
6. My television set has two _____. (aerial)
7. The tape was _____ when I pressed the button. (eject)
8. The radio _____ today is Mr. Kalungi Deus. (announce)
9. Quiet! There is some _____ going on now. (record)
10. He _____ the "eject" button and got the tape out. (press)
11. Musa _____ the news yesterday. (broadcast)
12. The football match was _____ at UBC radio. (telecast)

Give the plurals of each of the following words.

- | | | | |
|------------|---|------------------|---|
| 1. Studio | - | 7. Tape recorder | - |
| 2. Radio | - | 8. News | - |
| 3. Antenna | - | 9. Line up | - |
| 4. Video | - | 10. Talk show | - |
| 5. Piano | - | 11. Medium | - |
| 6. Aerial | - | 12. Stadium | - |

Use each of the given word in a sentence to show that you know the difference in their meaning.

1. Cast -
2. Cost -
3. Eject -

- | | |
|-----------|---|
| 4. Inject | - |
| 5. Live | - |
| 6. Leave | - |
| 7. News | - |
| 8. New | - |
| 9. Air | - |
| 10. Hair | - |

Rewrite the following sentence giving one word for the underlined group of words.

1. The football match was broadcast as it was taking place.

.....

2. The person who analyses a game as it has taken place was very smart.

.....

3. People who watched the football match in Nambole stadium were cheerful.

.....

4. The person who reads news on television or radio is very audible.

.....

5. The device for switching on the radio is broken.

.....

6. The sound producing device on radio or television is spoilt.

.....

7. The rod for searching signals on a television is very long.

.....

8. The people listening to the news are very speechless.

.....

9. The part of the phone put near the mouth while speaking on a telephone has a mechanical problem.

.....

10. The part of a phone put near the ear as one is making a call needs repair.

.....

(Using:and so / and neither)

Examples:

1. Both Tom and James like listening to news.

Tom likes listening to news and so does James.

2. Cartoons are interesting. Films are interesting.

Cartoons are interesting. Films are interesting.

3. Radio one broadcast news yesterday.

Radio samba broadcast news yesterday.

4. Radio one broadcast news yesterday and so did Radio Simba.

Radio one broadcast news yesterday and so did Radio Simba.

Exercise:

1. Peter, as well as the moderator, anchored the news.

.....

2. Both the listeners and the presenter seem interested in the programme.

.....

3. John and Peter have an antenna each.

.....

4. The talk show and the family show were aired on Saturday.

.....

5. The DVD player was spoilt. The extension cable was spoilt.

.....
6. You watched the weather forecast. I watched it too.
.....

7. James has a TV set. Peter also has a TV set.
.....

Using: and neither)

1. The journalist did not increase the volume. The editor did not increase the volume.
.....

2. The talk show was not interesting. The second scene of the play was not interesting.
.....
.....

3. The diarist does not have a note book. The novelist does not have a note book.
.....

4. The supervisor will not carry the CD. The supervisor will not carry the CD.
.....

5. The commentator did not tidy the stadia. The manager did not tidy the stadia.
.....

6. The examinee is not confident. The examiner is not confident.
.....

7. Both Tom and James are smart.
.....

Using : **needn't**

Examples: (Discuss If II Ref. St. Bernard page 88 and 89.

1. It was not necessary for you to switch off the DVD because I was watching a movie.

You needn't have switched off the DVD.

2. You should not play loud music.

You needn't play loud music.

Exercise:

1. It was not necessary for father to lock the television set in his room.

.....

2. It was not necessary for children to watch wrestling.

.....

3. Rose disconnected the power. It was not necessary.

.....

4. He sheds tears in front of the camera. It is not necessary.

.....

5. It is not necessary for Jalia to translate.

.....

6. It is not necessary for Birungi to adjust the aerial.

.....

7. The video Jockey should not copy some of the words.

.....

Exercise

1. Omonding's best radio programme is "sport".

.....

2. Mugoya likes watching the children's magazine programme most.

.....

3. The children's favourite pop song is black or white by Micheal Jackson.

.....

4. Nafula's favourite play is acted by Bakayimbira draw actors.

.....

5. My favorite news broad caster is Bbaale Francis.

.....

6. Stimas's best radio talk show is capital Gang.

.....

7. I do not know Wampande's favourite television programme.

.....

8. Nabulya's favourite music if lingala from Congo.

.....

STRUCTURES / GRAMMAR.

Using: "if I / she / he / they will)

Examples:

1. Magezi may get money and buy a radio.

If Magezi gets money, he will buy a radio.

2. I may go to Kampala and buy a record player.

If I got to Kampala, I will buy a record player.

Exercise

1. Kobugabe may apply for the job when she sees the advertisement.

.....

2. I may learn a lot when I tune to Radio One.

.....

3. Nafula has to adjust the aerial when the sound is not clear.

.....

4. When I turn on the radio I listen to the sports programmes.

.....

5. I may get money today and repair my speakers.

.....

6. When I visit the studio, I will learn a lot.

.....

7. Matama may tune radio West to listen to pop music.

.....

GRAMMAR

Using: If I had, I would

1. Having money, buying a radio.

If I had money, I would buy a radio.

2. Playing the Afrigo tape, having a cassette player.

If I had a cassette played, I would play Afrigo tape.

Exercise

1. Having a record player, listening to music.

.....

2. Turning to other stations, my radio having a knob.

.....

3. Making a radio station, having a studio.

.....

4. Broading the news, radio station having electricity.

.....

5. Recording my favourite music, having a blank late.

.....

6. Having money, making radio announcements.

.....

7. Having good speakers, staging a disco.

.....

8. Giving a better reception, my radio having an aerial.

.....

COMPREHENSION – PASSAGE:

Joshua’s Strange Ideas About the Radio Presenters. (St. Bernard pg. 91)

Master Electronics (St. Bernard pg. 93) (Revision 94 / 95)

		1				2		
			4					
		5						
6							7	
				8				
9								

Clue Across

1. The loaches of sound (6)
- 4.Push a radio button (5)
7. Stated on a radio (9)
8. Recorded on a tape (5)
9. Where music or radio programmes
are recorded (6)

4. Programme line up

St. Bernard English page 95

Clues down

2. Pleasant sound (5)
3. Where sound comes from a radio (8)
5. A round switch on a radio or TV (4)
8. Press to throw out a tape (5)

5. Advertisement

St. Bernard English page 93

5. Picture story

St. Bernard Book 7 pager 103

CHILDREN'S RIGHTS

COMPREHENSION

Vocabulary

Study the meaning of the following vocabulary.

- Accuse
- Arrest
- Child abuse
- Criminal
- Convict
- Sentence
- Obedient
- Respect
- Tidy
- Mistreat
- Sugar daddy
- Sugar mummy
- Dropout
- Jail
- Clothing
- Abortion
- Magistrate
- Judge
- Try
- Corporal
- Shelter
- Remand
- Forced
- Freedom
- Rights
- Cruel
- Plead
- Guilty
- Plead
- Imprison
- Innocent
- Judge
- Rights
- Try
- Witness

Make correct sentences using each of the given words.

1. Accuse
2. Criminal
3. Plead
4. guilty
5. judge

Use the letters in brackets to form correct words to complete the sentences below.

1. All children should learn about children's _____ (hgrits)
2. A person who is accused of committing a crime is called a _____
(cinmalri)
3. The police does not try _____ (cocvitns)
4. A _____ swears to say the truth all the time. (wissnet)
5. Parents and guardians should not _____ their children
6. _____ is a serious offence. (delefienmt)
7. Corporal _____ is a type of child abuse. (puntnishme)
8. A person is _____ when he/She is found guilty. (sedenteenc)
9. When a child _____ guilty of an offence, he or she should be
given the change to the right thing. (plased)

Give the opposite of each of the following.

- | | |
|---------------|---------------|
| - sugar daddy | - clean |
| - innocence | - refuse |
| - mummy | - peace |
| - early | - obedient |
| - tidy | - life |
| - clean | - alive |
| - respect | - interesting |

Give the plural form of each of the following words.

- Sugar – daddy
- Sugar –mummy
- Bad touch
- Marriage
- Chore
- Responsibility
- A baby’s shirt
- A lady’s watch
- A man’s house

Write the following in full.

- Gen.
- Col.
- Lt.
- Capt.
- Hon.
- Rt. Hon
- OC

Using:interested

Examples

1. Girls like cooking more than playing.
Girls are more interested in cooking than playing.
2. I would rather do the home chores than go for remedial lessons.
I am more interested in doing home chores than going for remedial lessons.

Exercise

1. Children prefer listening to traditional stories than to politics

-
2. She was wearing short dresses better than long ones.
.....
 3. Parents prefer buying new dresses to old ones.
.....
 4. I prefer resting to working on weekends.
.....
 5. Oalnya likes living in a permanent house more than living in a temporary one.
.....
 6. Parents would rather use peaceful means of ending conflicts than use violent ones.
.....
.....

Using: ought to

Examples

1. Tim should not accept gifts from sugar mummies.
Tom ought not to accept gifts from sugar mummies.
2. We should work hard in order to become rich.
We ought to work hard in order to become rich.

Exercise

1. Police should arrest parents who mistreat their children.
.....
2. We should report bad people to police.
.....
3. Government should not discourage abortion.

.....
4. Children's rights should be respected.

.....
5. School children should be responsible.

.....
6. One should not abuse one's rights.

.....
7. You should not lie to your parents.

.....
8. It is not necessary for you to disturb your teachers.

Using: either or)

Examples

1. You provide food to your children. You risk going to prison.
You either provide food to your children or risk going to prison.

2. You should accept or refuse our proposal
You should either accept or refuse our proposal

Exercise

1. They may confess. They may refuse to confess.
2. The boy will be taken to a remand home or to an orphanage.
3. He is right. He is wrong about children's rights.
4. He has realized his mistakes. He is just pretending.
5. Rose leaves with her parents. Rose leaves with her foster parents.
6. We are going to write about sugar-mummies. We are going to write about sugar-mummies.
7. He was accused of child neglect. He was also accused of child abuse.

CHILDREN'S RIGHTS

Using: accused of”

Examples

1. Mr. Mukasa doesn't look after his children.

Mr. Mukasa was accused of not looking after his children.

2. John mistreated his children.

John was accused of mistreating his children.

Exercise

Re-write the following sentences using: Accused of)

1. Did the taxi driver defile the school girl?

.....

2. Stella's step-mother killed a child.

.....

3. Akello's mother beat up her step-daughter.

.....

4. Nakato mistreated her children.

.....

5. Mwambu was arrested because he mistreated his son.

.....

6. The headmaster did not register his daughter out of the house.

.....

7. The older boys bullied the new comers at school.

.....

8. The policeman was blamed for neglecting his duty at the zebra crossing.

.....

9. Did the man rape the school girl?

.....

Using: “Thewhose”)

Examples

1. The woman went to the local council chairman. Her daughter had been defiled.

The woman whose daughter had been defiled went to the local council chairman.

2. The boy was taken to hospital. His arm was broken.

The boy whose arm was broken was taken to hospital.

Exercise

Re-write the sentence using:whose

1. The woman has gone to court. Her daughter was raped.

.....

2. The man has been arrested. His son was found to be malnourished.

.....

3. The woman has gone to the police. Her son was arrested.

.....

4. The boy escaped from home. His father is very cruel.

.....

5. The woman talked to me. Her son committed the crime.

.....

6. The man has been sentenced to life imprisonment. His son is in hospital.

.....

7. The girl is sick. Her parents locked her out in the cold.

.....

8. The chief has been arrested. His son stole a cow.

.....

9. The woman is the new judge. Her children are our friends.

.....

POEM

Read the poem carefully and answer the questions that follow in full sentences.

“Rise Up for Your Rights” Reference Book MK English Old Edition.

Questions

1. Why should children rise up for their rights?

.....

2. What examples of children are distressed?

.....

3. Why is it difficult to learn about problems in certain homes?

.....

4. What advice is given to children?

.....

5. What advice is given to parents?

.....

6. What punishment should be given to parents for neglect of their children?

.....

NOTICE

Study the notice carefully about children’s statute and answer questions that follow in full sentences.

A statute is a law passed by parliament.

Children’ statute 2010

Ministry of gender, youth and social development any person who is below 18 years is juvenile.

1. Children have a right to:-

- Education and guidance
- Immunization

- Balanced diet
 - Clothing
 - Shelter
 - Medical care / attention
2. Child is entitled to live with their parents or guardians.
 3. Children should be protected from violence, abuse, neglect and discrimination.
 4. No child shall be employed or engaged in any activity that may be harmful to his or her health, education, mental, physical or moral development.

Questions

1. When was the statute written?
.....
2. What is the children's statute about?
.....
3. What should be done to parents who stubbornly refuse to look after a child?
.....
4. Suggest what local council should do to protect a child.
.....
5. Where should juvenile delinquents be tried?
.....
6. Why did the government come up with the statute above?
.....

CHILDREN’S RIGHTS

GUIDED COMPOSITION

Picture Composition:

Study the picture carefully and answer the questions that follow in full sentences. Write correct sentences about each picture. Ref.

“Kantal and the Cruel Mother”

Use the following words.

- Being imprisoned
- Carrying
- Burning
- Saving
- Arresting
- sentencing

COMPOSITION WRITING.

Write a short story about children’s rights. In your composition show the examples of children’s rights, the importance of keeping children’s right and advise people on how to stop child abuse.

ANIMAL NEEDS AND FREEDOM.

Vocabulary	Reproduction	Hindrance
Capture	Insemination	Natural
Poach	Discomfort	Poacher
Protect	Injury	Sanctuary
Captivity	Secure	offspring
Freedom	Thirsty	
Frighten	Hunger	
Needs	Anger	

Use each of the given words in a sentence to show that you know the difference in their meaning.

1. Hunger

5. Need

9. Bleed

2. Anger

6. Knead

10. Breed

3. Poach

7. Thirsty

4. Coach

8. Thirty

Give the opposite of the words.

1. Comfort

2. Comfortable

3. Secure

4. Natural

5. Protect

6. Legal

7. Responsible

Write these abbreviation in full.

1. WSPA

2. USPA

3. UWEC

4. UWA

5. WCA

6. WCU

7. ABS

8. AVAR

9. ASAB

ENVIRONMENTAL PROTECTION COMPOSITION

Listening, Speaking, Reading, Writing.

Vocabulary

Study the meaning of the following vocabulary.

- | | | |
|-----------------|---------------|----------------|
| • Conserve | • Storms | • Garbage |
| • Degrade | • Incinerator | • Mulching |
| • Crop rotation | • Erode | • Refuse |
| • Over grazing | • Dump / dumb | • Pollute |
| • Drainage | • Bin | • Reserve |
| • Drought | • Rubbish | • Terraces |
| • Fauna | • Dispose of | • Soil erosion |
| • Flora | • Habitat | • environment |
| • Garbage | • Dump | |
| • Trash | • Erode | |

Make correct sentences using each of the given vocabulary.

1. Bin
2. Bean
3. Dump
4. dumb

Give the opposites.

1. Deforestation
2. Degradation

Use the correct form of the word in brackets to complete the sentence correctly.

1. Cattle keepers should avoid _____ in order to avoid soil erosion.
(overgraze)
2. Soil _____ affect soil fertility in a garden. (erode)
3. The method of interchanging crops in a garden is known as crop
_____ (rotate)
4. We _____ all the polythene bags after using them last week. (burn)
5. Terracing is a good method in soil _____ (conserve)
6. _____ affect land, air and water. (pollute)
7. A poor _____ system can lead to cholera. (drain)
8. If we do not _____ the environment, we shall have
poor yields in future. (protect)
9. All _____ need water and air to grow well. (plant)
10. _____ is a good method of agriculture. (mulch)

ENVIRONMENTAL PROTECTION

Structures

Using: If we do not

Re-write the sentences using.

- a) If we do not
- b) Unless we

Examples

1. We dig terraces to avoid soil erosion.
(a) If we do not dig terraces, the fertile soil will be eroded.
(b) Unless we dig terraces, the fertile soil will be eroded.

2. We reserve forests to get sufficient rainfall.
 - (a) If we don't reserve forests, we shall not get sufficient rainfall.
 - (b) Unless we reserve forests, we shall not get sufficient rainfall.

Exercise

1. We drain swamps to avoid stagnant water.

.....
.....

2. We dump garbage in a pit to avoid houseflies.

.....
.....

3. We practice crop rotation to avoid soil degradation.

.....
.....

4. We mulch tomatoes to get health crops.

.....
.....

5. We avoid overgrazing in order to prevent soil erosion.

.....
.....

6. We fight air pollution to have a healthy environment.

.....
.....

7. We conserve soil fertility to get good yields.

.....
.....

8. We apply manure to the soil so as to make it fertile.

.....
.....

The use of since Since

Examples

1. We shall have no rain because the forests have been cut.

Since the forests have been cut, we shall have rain.

We shall have no rain since the forests have been cut.

Exercise:

1. The land in Kabale is hilly. People dig terraces to control soil erosion.

.....
.....

2. The water was polluted. Many aquatic animals died.

.....
.....

3. Ongana had a big piece of land. He used it to plant trees.

.....
.....

4. I did not have money to buy official fertilizers. I used organic manure.

.....
.....

5. Mungu was an example environmentalist. She was given to oversee its activities.

.....
.....

6. I wasn't very busy in the holiday. I planted some trees.

.....
.....

7. I needed to plant more trees. I bought seedlings from the forestry department.

.....
.....

Using: “, so “

Examples

Join the sentences using:do”

1. The soil was poor. The farm manager added manure it fertile.
The soil was poor, so the farm manager added manure to make it fertile.
2. The air was polluted. A number of residents fell sick.
The air polluted, so a number of residents fell sick.

Exercise

Join sentences using:so”

1. The terraces broke down. They were not well made.

.....

2. We drank polluted water, we became sick.

.....

3. There was drought. All the crops withered.

.....

4. The soils were fertile. The farmers got high yields.

.....

5. There was garbage in the compound. The garbage attracted many flies.

.....

6. There was too much rain. The top soil was washed away.

.....

7. The school garden was mulched. It produced good crops.

.....

8. Manure was applied to the plantation. The soil became fertile.

.....

9. The forests were reserved. There was much more rainfall.

.....

10. There was much refuse in the compound. Dysentery broke out.

.....

Using “If Could / would have)

Examples

1. Juma did not dig terraces because he did not bring a hoe.

(a) If Juma had brought a hoe, he would have dug the terraces.

(b) If Juma had brought a hoe, he could have dug the terraces.

Exercise

Re-write the following sentences using: “IfCould / would have “

1. Aloyo did not buy the manure because she did not have the money.

.....

.....

2. Father did not protect the soil because he didn't praise crop rotation.

.....

.....

3. Stella didn't get a good yield because he did not irrigate the crops.

.....

.....
4. Kiyengo didn't clean the drainage because he did not have the tools.
.....
.....

5. Asimwe did not drink the water because she did not boil it.
.....
.....

6. Lule didn't remove the garbage because he did not have a rake.
.....
.....

7. Adeke did not cook the food because she did not buy firewood.
.....
.....

8. The man did not overgraze the land because they did not have many cattle.
.....
.....

Using: "Ifwouldn't have"

Examples

Join the sentence using: "If wouldn't have)

1. Drank the milk not knowing that it had gone sour.
.....

If I had known that the milk had gone sour, I wouldn't have drunk it.

2. House flies flew from the dustbin because I did not cover it with a lid.

If I had known that houseflies would fly from the dust bin, I would have left it uncovered.

Exercise

1. The farmers lost all the fertile soil because they did not dig terraces.

.....

2. I planted the trees not knowing there was no rain that season.

.....

3. All the fish have been killed because the pond was not protected.

.....

4. The weevils attacked the banana plantation because it was not mulched.

.....

5. People cut down trees because they didn't know their importance.

.....

6. They keep very few cattle because they didn't have enough land.

.....

7. The land has lost all its fertility because I didn't practice crop rotation.

.....

8. The lake was polluted because people didn't keep the sewage away.

.....

SET III



MATHEMATICS

TOPIC: ALGEBRA

SUBTOPIC: Subtracting an algebraic phrase from another

Content: If no brackets, first bracket each phrase.

- Subtract the 1st term from the second term.
- Then follow the rule of signs while opening brackets.

Examples:

1. Subtract $x + 3$ from $x + 2$

$$\begin{aligned}(x + 2) - (x + 3) \\(x + 2) - (x + 3) &= x + 2 - x - 3 \\&= x - x + 2 - 3 \\&= \underline{-1}\end{aligned}$$

2. Subtract $3(x - 1)$ from $2(x + 1)$

$$\begin{aligned}2(x + 1) - 3(x - 1) \\2x + 2 - 3x + 3 &= 2x - 3x + 2 + 3 \\&= -x + 5 \text{ or} \\&= \underline{5 - x}\end{aligned}$$

Exercise:

1. Subtract $P + 1$ from $2p + 3$
 2. Subtract $3x - 5$ from $x - 4$
 3. Find the difference between $3p - 1$ and $5p - 2$
 4. Subtract $(x - 4)$ from $3(x + 2)$
 5. Subtract $-2(x - 1)$ from $-2(x - 4)$
 6. Subtract $2(m - 2)$ from $-3(m - 5)$
- Removing brackets when the factor is a fraction.
 - Remove brackets by multiplying each term by the fraction.
 - Collect like terms.

Examples:

1. Simplify: $\frac{1}{2}(4a + 6ab)$

$$\begin{aligned}\frac{1}{2}(4a + 6ab) &= \frac{4a + 6ab}{2} \\ &= \frac{\cancel{4}a}{\cancel{2}} + \frac{\cancel{6}ab}{\cancel{2}} \\ &= 2a + 3ab\end{aligned}$$

2. Simplify: $\frac{2}{3}(9a - 12ab)$

$$\begin{aligned}\frac{2}{3}(9a - 12ab) &= \frac{18a - 24ab}{3} \\ &= \frac{\cancel{18}a}{\cancel{3}} - \frac{\cancel{24}ab}{\cancel{3}} \\ &= 6a - 8ab\end{aligned}$$

Example: Simplifying.

1. Simplify: $\frac{1}{5}(2a - 15b)$

2. Simplify: $\frac{2}{7}(42x - 14y)$

3. Simplify: $\frac{1}{6}(18a + 24b)$

4. Simplify: $\frac{4}{5}(30x - 24y)$

5. Simplify: $\frac{1}{5}(45m - 15k)$

6. Simplify: $\frac{1}{7}(21a - 35ab)$

7. Simplify: $\frac{2}{3}(6x - 9xy)$

Addition and subtraction of fractional algebraic terms.

Multiplying each term with LCM.

- Removing brackets.
- Collecting like terms.
- Simplify.

Example:

$$\begin{aligned} & \frac{x+1}{2} + \frac{x-2}{3} & \text{LCM} = 6 \\ & \frac{x+1}{2} + \frac{x-2}{3} = \frac{3(x+1) + 2(x-2)}{6} \\ & & = \frac{3x+3+2x+3-4}{6} \\ & & = \frac{5x-1}{6} \end{aligned}$$

Exercise: Simplifying fractional terms.

1. Simplify: $\frac{9a+3}{2} + \frac{a+2}{3}$
2. Simplify: $\frac{b-3}{3} - \frac{b+1}{4}$
3. Simplify: $\frac{2x-3}{3} - \frac{k-1}{5}$
4. Simplify: $\frac{3y-2}{3} + \frac{2y+4}{7}$
5. Simplify: $\frac{5x+4}{2} - \frac{2x-8}{5}$
6. Simplify: $\frac{3n-4}{2} + \frac{2n+7}{5}$

- Simplifying addition and subtraction of fractional algebraic terms.
- Multiplying each term by LCM.
- Removing brackets.

- Collecting like terms.
- Simplifying.

Examples:

$$\text{Simplify: } \frac{3}{4}(2x - 1) - \frac{1}{3}(x + 2)$$

$$= \frac{6x}{4} - \frac{3}{4} - \frac{x}{3} - \frac{2}{3}$$

$$= \frac{6x}{4} - \frac{3}{4} - \frac{x}{3} - \frac{2}{3}$$

$$= \frac{18x}{12} - \frac{9}{12} - \frac{4x}{12} - \frac{8}{12}$$

$$= \frac{18x}{12} - \frac{4x}{12} - \frac{9}{12} - \frac{8}{12}$$

$$= \frac{14x}{12} - \frac{17}{12}$$

$$= \frac{7}{6}x - \frac{17}{12}$$

$$= \frac{7x}{6} - \frac{17}{12}$$

$$= 1\frac{1}{6}x - 1\frac{5}{12}$$

Exercise: Work out the following.

1. Simplify: $\frac{3}{4}(3x - 1) - \frac{1}{3}(3x + 1)$
2. Simplify: $\frac{2}{5}(2x - 3) - \frac{2}{7}(x + 4)$
3. Simplify: $\frac{5}{7}(3x + 2) - \frac{1}{5}(x + 2)$
4. Simplify: $\frac{4}{5}(x - 3) - \frac{1}{4}(x + 1)$
5. Simplify: $\frac{3}{7}(2m - 6) - \frac{1}{6}(3m + 4)$
6. Simplify: $\frac{6}{7}(3x - 9) - \frac{2}{5}(4x + 6)$

- Solving complex fractional algebraic equations.
- Finding LCM.
- Multiplying each term by LCM.
- Then solving the equation.

Example:

1. **Solve:** $3x + 7 - \frac{3}{4}x = 10$

$$\frac{3x}{1} + \frac{7}{1} - \frac{3x}{4} = \frac{10}{1} \quad (\text{LCM} = 4)$$

$$\left(4 \times \frac{3x}{1} \right) + \left(7 \times 4 \right) - \left(\frac{3x}{4} \times 4 \right) = \left(\frac{10}{1} \times 4 \right)$$

$$12x + 28 - 3x = 40$$

$$12x - 3x + 28 = 40$$

$$9x + 28 = 40$$

$$9x + 28 - 28 = 40 - 28$$

$$9x = 12$$

$$\frac{9x}{9} = \frac{12}{9}$$

$$x = \frac{4}{3}$$

$$x = 1\frac{1}{3}$$

2. **Solve:** $\frac{m}{3} + \frac{1}{4} + \frac{m}{4} = 2$

$$\frac{m}{3} + \frac{1}{4} + \frac{m}{4} = 2 \quad (\text{LCM} = 12)$$

$$12 \times \left(\frac{m}{3} \right) + 12 \times \left(\frac{1}{4} \right) + 12 \times \left(\frac{m}{4} \right) = 12 \times 2$$

$$4m + 3 + 3m = 24$$

$$4m + 3m + 3 = 24$$

$$7m + 3 - 3 = 24 - 3$$

$$7m = 21$$

$$\frac{7m}{7} = \frac{21}{7}$$

$$m = 3$$

$$m = 3$$

EXERCISE:

1. Solve: $\frac{x}{8} + \frac{6}{4} + \frac{x}{4} = 3$

2. Solve: $\frac{3y}{7} - 2y = 34$

3. Solve: $\frac{x}{3} - \frac{3}{5} + \frac{x}{5} = 8$

4. Solve: $4x + 7 - \frac{4x}{7} = 31$

5. Solve: $\frac{2}{5}P - P = 6$

6. Solve: $5x + 5 - \frac{2}{3}x = 18$

- Solving complex algebraic fractional equations.
- Finding the LCM.
- Multiplying each term by LCM.
- Collecting like terms.
- Solving the equation.

Examples:

$$\text{LCM} = (x+2)(3x+1)$$

$$1. \text{ Solve: } \frac{3x-1}{2} = \frac{7x+1}{6}$$

$$\frac{3x-1}{2} = \frac{7x+1}{6} \quad \text{LCM} = 6$$

$$\cancel{6} \times \frac{(3x-1)}{\cancel{2}} = \frac{(7x+1)}{\cancel{6}} \times \cancel{6}$$

$$3(3x-1) = 7x+1$$

$$9x-3 = 7x+1$$

$$9x-3+3 = 7x+1+3$$

$$9x-7x = 7x-7x+4$$

$$2x = 4$$

$$\cancel{2}x = \frac{4}{\cancel{2}}$$

$$x = 2$$

$$2. \text{ Solve: } \frac{2}{x+2} = \frac{4}{3x+1}$$

$$(\cancel{x+2})(3x+1) \left(\frac{2}{\cancel{x+2}} \right) = \frac{4}{\cancel{3x+1}} (x+2)(\cancel{3x+1})$$

$$2(3x+1) = 4(x+2)$$

$$6x+2 = 4x+8$$

$$6x+2-2 = 4x+8-2$$

$$6x = 4x+6$$

$$6x-4x = 4x-4x+6$$

$$2x = 6$$

$$\cancel{2}x = \frac{6}{\cancel{2}}$$

$$x = 3$$

Exercise:

$$1. \text{ Solve: } \frac{x-4}{8} = \frac{x-8}{10}$$

$$2. \text{ Solve: } \frac{2(x-4)}{3} = \frac{3(x-6)}{2}$$

3. Solve: $\frac{m - 7}{5} = \frac{p - 11}{3}$

4. Solve: $\frac{4}{4x + 2} = \frac{7}{4x - 4}$

5. Solve: $\frac{1}{2x + 3} = \frac{5}{13x - 7}$

6. Solve: $\frac{3}{m - 2} = \frac{4}{m + 1}$

SUBSTITUTION

- To substitute means to replace.
- Expand the terms.
- Then substitute (replace).

Examples: Work out the following.

1. If $a = 2$, $b = 3$ and $c = 5$. Find the value of;

$$\begin{aligned} & (3a + b) + (3c + a) \\ &= (3 \times a) + b + (3 \times c) + a \\ &= (3 \times 2) + 3 + (3 \times 5) + 2 \\ &= 6 + 3 + 15 + 2 \\ &= 9 + 17 \\ &= 26 \end{aligned}$$

2. Given that $b = -3$, $a = 4$, and $c = -5$. Find the value of $10b - c$

$$\begin{aligned} 10b - c &= (10 \times b) - c \\ &= (10 \times 3) - ^{-}5 \\ &= ^{-}30 + 5 \\ &= ^{+}5 - ^{-}30 \\ &= ^{-}25 \end{aligned}$$

3. Given that $y = p \times q$

Find the value of y when $p = 1\frac{1}{2} \times \frac{1}{2}$

$$Y = p \times q$$

$$Y = 1\frac{1}{2} \times \frac{1}{2}$$

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

$$Y = \frac{3}{4}$$

Exercise:

1. Find the value of $3b + 5$ when $b = 2$
2. If $y = 4h + 8$ Find y when $h = \frac{1}{2}$
3. What is the value of $\frac{a(3d^2 + 2c^2)}{cd}$ when $a = 6$, $b = 3$ and $d = 4$.
4. If $a = 5$, $b = 10$ and $c = 6$ and $d = \frac{1}{2}$.
 - a. Find the value of $ad(b - c)$
 - b. Find the value of $d(b^2 + c^2)$

- **FORMING AND SOLVING EQUATIONS.**
- IDENTIFY THE TERMS.
- FORM AN EQUATION.

SOLVE THE EQUATION.

Examples:

1. A boy is 2 years older than his sister. Their total age is 20 years. How old is the sister? Let the sister's age be y .

Sister	Boy	Total
Y	$Y + 2$	20 years

$$Y + y + 2 = 20 \text{ years}$$

$$2y + 2 = 20$$

$$2y + 2 - 2 = 20 - 2$$

$$2y = 18$$

$$\underline{2}y = \underline{18}^9$$

$$\cancel{2} \quad \quad \quad \cancel{2}_1$$

$$y = 9 \quad \therefore \text{The sister is 9 years old.}$$

2. A man earns sh.20,000 less than his wife daily. Their total daily income is sh.80,000. How much does his wife earn?

Let the wife's income be x.

Wife	Man	Total
X	X - sh.20,000	Sh,80,000

$$X + x - \text{sh.20,000} = \text{sh.80,000}$$

$$2x - \text{sh.20,000} + \text{sh.20,000} = \text{sh.80,000} + \text{sh.20,000}$$

$$2x = \text{sh.100,000}$$

$$\frac{2x}{2} = \frac{\text{sh.100,000}}{2}$$

$$x = \text{sh.50,000}$$

$$X = \text{sh.50,000}$$

$$X = \text{sh.50,000}$$

∴ The wife earns sh.50,000 daily.

Exercise: Form and solve the equations:

- Okello has 7 more cows than Mugisha. Altogether they have 19 cows. How many cows does Mugisha have?
- Ngunga's daughter is 7 years older than the son. Their total age is 27 years. How old is the son?
- Mutenyi is 8 years younger than his eldest sister. Their total age is 24 years. How old is the eldest sister?

- **Forming and solving equations.**
- Identify the terms.
- Form an equation.
- Solve the equation.

Examples:

- Musa is twice as old as Anna. Their total age is 18 years. How old is Anna?

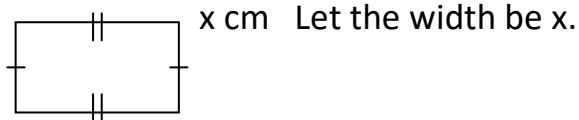
Let Anna's age be x.

Anna	Musa	Total
x years	2x years	18 years

- Forming and solving Algebraic equations.
- Identify the terms.
- Form the equation.
- Solve the equation.

Examples:

1. In a rectangle the length is twice the width and the perimeter is 24 cm. Find the area of the rectangle.



$$L + W + L + W = \text{perimeter}$$

$$2x + x + 2x + x = 24 \text{ cm}$$

$$6x = 24 \text{ cm}$$

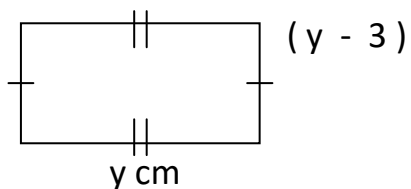
$$\begin{array}{r} 1 \\ \cancel{6}x \\ \hline 6 \end{array} = \begin{array}{r} 4 \\ \cancel{24} \\ \hline 6 \end{array}$$

$$x = 4$$

$$\begin{aligned} \text{Length} &= 2x & \text{width is } x &= 4 \text{ cm} \\ &= 2 \times 4 & \text{Area} &= L \times W \\ & & &= 8 \text{ cm} \times 4 \text{ cm} \end{aligned}$$

$$\text{Area} = 32 \text{ cm}^2$$

2. The width of a rectangle is 3 cm less than the length. The perimeter of a rectangle is 22 cm. Find the area.



$$\text{Length is } y = 7 \text{ cm}$$

$$\text{Width} = (y - 3)$$

$$= 7 - 3$$

$$= 4 \text{ cm}$$

$$\text{length} = y$$

$$\text{Width} = (y - 3)$$

$$2(L + W) = \text{perimeter}$$

$$2(y + y - 3) = 22 \text{ cm}$$

$$2(2y - 3) = 22 \text{ cm}$$

$$4y - 6 = 22$$

$$4y - 6 + 6 = 22 + 6$$

$$4y = 28$$

$$\begin{aligned} A &= L \times W \\ &= 7 \text{ cm} \times 4 \text{ cm} \\ \text{Area} &= 28 \text{ cm}^2 \end{aligned}$$

$$\begin{array}{r} 1 \\ \cancel{4}y \\ \hline \cancel{4} \\ 1 \end{array} = \begin{array}{r} 7 \\ \cancel{28} \\ \hline \cancel{4} \\ 1 \end{array} \quad \left| \quad y = 7 \right.$$

Exercise: Form and solve the equations:

1. The length of a rectangle is 2 cm more than the width. Find its area if the perimeter is 20 cm.
2. The length of a rectangle is 3 times its width. If the perimeter is 44 cm, find its area.
3. The width of a rectangle is 40 cm less than the length. If its perimeter is 90 cm, find its area.

- **Forming and solving Algebraic equations.**
- **Identify the terms.**
- **Form the equation.**
- **Solve the equation.**

NB: (i) Less means subtraction.

(iv) Older means addition.

(ii) Greater means addition.

(v) More means addition.

(iii) Younger means subtraction

Example:

Moses gets sh.15,000 more than his brother Joseph. They both get sh.150,000.

- (a) How much does Joseph get?
- (b) How much does Moses get?
- (c) Let Joseph get sh.y.

Joseph	Moses	Total
Sh.y	Sh.y + 15,000	Sh.150,000

$$Y + y + \text{sh.15000} = \text{sh.150,000}$$

$$2y + \text{sh.15000} = \text{sh.150,000}$$

$$2y + \text{sh.15000} = \text{sh.150,000}$$

$$2y + \text{sh.15000} - \text{sh.15000} = \text{sh.150000} - \text{sh.15000}$$

$$2y = \text{sh.135000}$$

$$\frac{2y}{2} = \frac{\text{sh.}135000}{2}$$

$$y = \text{sh.}67500$$

a. Joseph gets $y = \text{sh.}67500$

b. Moses gets $= y + 15000$

$$= \text{sh.}67500 + \text{sh.}15000$$

$$= \text{sh.}82500$$

1. A table costs sh.800 more than a chair. Moses bought both a table and a chair at sh.18800.

a. Find the cost of a chair.

b. Find the cost of a table.

2. The cost of a lamp is a half the cost of a bicycle.

a) Find the cost of a bicycle. (b) Find the cost of a lamp.

APPLICATION OF ALGEBRA.

- Identify the terms.
- Form the equation.
- Solve the equation.

Example:

The mother bought 2 pens at sh.(x + 60) each and 4 pencils at sh. 2x each. If the mother spent sh.4800.

a) Find the value of x.

1 pen = sh(x + 60)	1 pencil = 2x	Sh.4800
2 pens = sh.(x + 60)	4 pencils = 4 x 2x = sh.8x	

$$2(x + 60) + 8x = \text{sh.}4800$$

$$2x + 120 + 8x = \text{sh.}4800$$

$$2x + 8x + 120 = \text{sh.}4800$$

$$10x + 120 - 120 = \text{sh.}4800 - 120$$

$$10x = \text{sh.}4680$$

$$\begin{array}{r}
 10x \\
 10 \\
 \hline
 x
 \end{array}
 = \text{sh.} \frac{4680}{10}
 = \text{sh.} 468$$

- b) Find the cost of a pen.
 c) What is the cost of each pencil?

$$\begin{aligned}
 \text{b) Cost of 1 pen} &= \text{sh.} x + 60 \\
 &= \text{sh.} 468 + 60 \\
 &= \text{sh.} 528
 \end{aligned}$$

$$\begin{aligned}
 \text{c) Cost of 1 pencil} &= \text{sh.} 2x \\
 &= \text{sh.} 2 \times 468 \\
 &= \text{sh.} 936
 \end{aligned}$$

Exercise: Form and solve the equations.

- The cost of each pen is sh. (y + 400) and a pencil is sh. Y. Kato bought 4 pens and 3 pencils at sh.12000.
 - What is the value of y?
 - How much is spent on pens?
 - How much is spent on pencils?
- Ssemwango bought 8 books at sh.(x - 150) each and 2 geometry sets at sh.(x + 100) each. If he spent sh.5300.
 - Find the value of X.
 - Find the amount spent on books.
 - Find the amount spent on geometry sets.

- Application in Algebra.

- Identify the terms.
- Form the equation.
- Solve the equation.

Example:

Mutyaba had sh.30,000 less than Mwebaze and Oketch had twice as much as Mwebaze. If they have sh.120,000 in total.

How much did each boy have?

Let Mwebaze have sh. X.

Mwebaze	Oketch	Mutyaba	Total
X	2x	X – sh.30,000	Sh.120,000

$$X + 2x + x - \text{sh.}30,000 = \text{sh.}120,000$$

$$4x - \text{sh.}30,000 = \text{sh.}120,000$$

$$\text{Mwebaze had } x = \text{sh.}37,500$$

$$4x - 30,000 + 30,000 = \text{sh.}120,000 + 30,000$$

$$\text{Oketch had } = \text{sh.}2x$$

$$4x = \text{sh.}150,000$$

$$= \text{sh.}2 \times X$$

$$\frac{1}{4}x = \text{sh.} \frac{150,000}{4} = \text{sh.}37,500$$

$$= \text{sh.}2 \times \text{sh.}37,500$$

$$\frac{1}{4}x = \text{sh.}37,500$$

$$x = \text{sh.}150,000$$

$$= \text{sh.}75,000$$

$$\text{Mutyaba had } = x - \text{sh.}30,000$$

$$= \text{sh.}37,500$$

$$- \text{sh.}30,000$$

$$\text{Mutyaba had } = \text{sh.}7,500$$

Exercise: Form and solve the equation.

Nkyambadde had 5 books more than Sifuna. Nkyambadde and Sifuna had 27 books.

a) Find the number of books each had?

b) How many more books did Oketch have than Mwebaze?

APPLICATION IN ALGEBRA.

- Identify the terms.
- Form the equation.
- Solve the equation.

Example:

1. Bbala is 4 years older than Joel. In 10 years' time, the sum of their ages will be 40 years.
 - a) How old is each of them now?
 - b) How old will each of them be in 10 years' time?

Present age let Joel be x years.

Joel	Bbale
X	(x + 4) years

In 10 years time.

Joel	Bbala	Sum
$(x + 10)$ years	$(x + 4 + 10)$ years	40 years

$$X + 10 + x + 4 + 10 = 40 \text{ years}$$

$$X + x + 10 + 4 + 10 = 40$$

$$2x + 24 = 40$$

$$2x + 24 - 24 = 40 - 24$$

$$2x = 16$$

$$\frac{\frac{1}{2}x}{\frac{1}{2}} = \frac{\frac{8}{16}}{\frac{1}{2}}$$

$$x = -8$$

Present age:

Joel is $x = 8$ years now.

$$\text{Bbala} = x + 4$$

$$= 8 + 4$$

= 12 years now.

In 10 years time Joel will be = $x + 10$

$$= 8 + 10$$

= 18 years

$$\begin{aligned}
 \text{Bbala} &= x + 14 \\
 &= 8 + 14 \\
 &= 22 \text{ years.}
 \end{aligned}$$

Exercise: Form and solve the equation.

1. Matovu is 7 years older than Muwonge. In 5 years time, their total age will be 57 years.

- (a) How old is each of them now?
- (b) How old will each be in 5 years time?

2. Jane is 5 years older than Sarah. In 4 years time Jane will be twice as old as Sarah.

- (a) How old is each one now?
- (b) How old will each of them be in 5 years time?

APPLICATION IN ALGEBRA.

- Identify the terms.
- Form the equation.
- Solve the equation.

Example:

A man is 28 years older than his daughter. In 5 years time, he will be twice as old as his daughter.

- (a) Find each one's present age.
- (b) How old will each of them be in 5 years' time.

Let the daughter be y years.

Present age	Daughter = y	Man = $(y + 28)$ years
In 5 year time	$(y + 5)$ yrs	$(y + 5 + 28)$ years

Twice daughter's age = man's age

$$2(y + 5) = (y + 28 + 5)$$

$$2(y + 5) = y + 33$$

$$2y + 10 = y + 33$$

$$2y + 10 - 10 = y + 33 - 10$$

$$2y = y + 23$$

$$2y - y = y - y + 23$$

$$y = 23 \text{ years}$$

Present age:

$$\text{Daughter is } y = 23 \text{ years}$$

$$\text{Man's age now} = (y + 28) \text{ years}$$

$$= 23 + 28$$

$$= 51 \text{ years}$$

In 5 years time

$$\text{Daughter} = y + 5$$

$$= 23 + 5$$

$$= 28 \text{ years}$$

$$\text{Man will be} = y + 28 + 5$$

$$= y + 33$$

$$= 23 + 33$$

$$= 56 \text{ years}$$

Exercise: Form and solve the equation.

Monica is 8 years older than her sister. In 3 years time, Monica will be 3 times as old as her sister.

- (a) How old is each on now?
- (b) How old will each one be in 3 years' time?
- (c) Calculate the sum of their ages.

APPLICATION IN ALGEBRA.

- Identify the terms.
- Form the equation.
- Solve the equation.

Example:

A father is 5 times as old as his son. In 10 years time, the sum of their ages will be 50 years.

(a) Find their present age.

(b) Find their age in 10 years' time.

Let the son's age be x .

Present age	Son = x	Father = $5x$	Total
In 10 years time	$x + 10$	$5x + 10$	50

$$x + 10 + 5x + 10 = 50 \text{ years.}$$

$$6x + 10 + 10 = 50$$

$$6x + 20 = 50$$

$$6x + 20 - 20 = 50 - 20$$

$$6x = 30$$

$$6x = 30$$

$$6 = 56$$

$$x = 5 \text{ years}$$

Present age:

$$\text{Son is } x = 5 \text{ years}$$

$$\text{Father} = 5x$$

$$= 5 \times 5 \text{ years}$$

$$= 25 \text{ years}$$

in 10 years' time

$$\text{son} = x + 10$$

$$= 5 + 10$$

$$= 15 \text{ years}$$

$$\text{Father} = 5x + 10$$

$$= (5 \times x) + 10$$

$$= (5 \times 5) + 10$$

$$= 25 + 10$$

$$= 35 \text{ years.}$$

Exercise: Form and solve the equation.

Oliver is twice as old as her brother. In 4 years' time, their total age will be 50 years.

- How old is each one now?
- How old will each one be in 4 years' times.
- Find the sum of their ages.

APPLICATION IN ALGEBRA.

- Identify the terms.
- Form the equation.
- Solve the equation.

Exercise:

A son is 6 years younger than his father. In 8 years' time, the sum of their ages will be 44 years.

(a) How old is each of them now?

(b) How old will each be in 8 years?

Let the father's age be K.

	Father	son	Total
Present age	K	K - 6	
In 8yrs time	K + 8	K + 8 - 6	44 years

$$K + 8 + K + 8 - 6 = 44 \text{ years}$$

$$K + K + 8 + 8 - 6 = 44$$

$$2K + 16 - 6 = 44$$

$$2K + 10 = 44$$

Present age: Father is K = 17 years

$$\text{Son} = K - 6$$

$$\text{Son is} = 17 - 6$$

$$= 11 \text{ years}$$

$$\text{In 8 year time Son} = K + 8 - 6$$

$$= (17 + 8) - 6$$

$$= 25 - 6$$

$$= 19 \text{ years}$$

$$2K + 10 - 10 = 44 - 10$$

$$2K = 34$$

$$\frac{1}{2}K = \frac{17}{2}$$

$$\underline{2K} = \underline{34}$$

$$\frac{2}{2}K = \frac{34}{2}$$

$$K = 17$$

In 8 year's time

$$\text{Father's age} = K + 8$$

$$17 + 8 = 25 \text{ years}$$

Exercise:

Annet is 20 years younger than Peter. In 5 years time, Peter will be twice as old as Annet.

- How old is Annet now?
- How old is Peter now?
- How old will each of them be in 5 years time?
- Calculate the difference between their ages after 5 years.

Factorise completely.

Examples:

- Factorise completely.

$$12a + 8a^2$$

2	2a	$8a^2$
a	6a	$4a^2$
a	3a	2a

$$12a + 8a^2 = 2 \times 2 \times a(3 + 2a)$$

$$12 + 8a = 4a(3 + 2a)$$

- Factorise completely.

$$24y^2x - 14yx^2$$

2	$24y^2x$	$14yx^2$
Y	$12y^2x$	$7yx$
X	$12yx$	$7x^2$
	$12y$	$7x$

$$24y^2x - 14yx^2 = 2 \times y \times X(12y - 7x)$$

$$24y^2x - 14yx^2 = 2yx(12y - 7x)$$

Exercise: Factorization

- Factorize completely: $6a^2 + 8ab^2$
- Factorize completely: $27y^2x + 9x^3$
- Factorize completely: $12xy^2 + 8x$

4. Factorize completely: $14p^2 - 7p$
5. Factorize completely: $15xy^2 - 2x^2y$
6. Factorize completely: $15t^2 - 24$
7. Factorize completely: $9p^2q - 3q^2p$
8. Factorize completely: $18y + 12y^2$
9. Factorize completely: $10xy + 25x^2$
10. Factorize completely: $4t^2 + 18t$

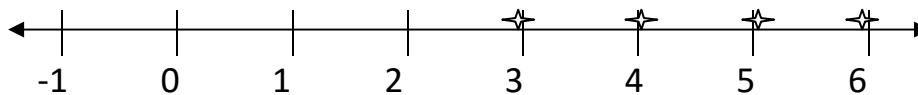
SOLUTION SETS

- Finding solution sets.
- Use of a number line.
- Plotting integers on a number line.
- Identifying the given integers.

Example:

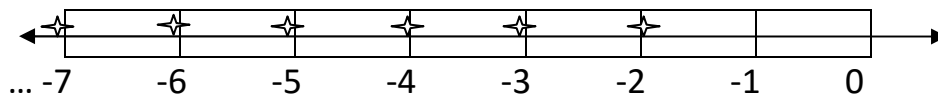
Every integer on the right of the other is greater than the one on the left.

1. If x is an integer, find the solution set for $x > 2$.



∴ The solution set for $x = \{ 3, 4, 5, 6, \dots \}$

2. If y is a set of all integers less than -1 find the solution set for y .



∴ The solution set for $y = \{ -2, -3, -4, -5, \dots \}$

- | | | |
|---------------|----------------|-------------|
| 1. $X > 3$ | 6. $X < 0$ | 11. $X < 2$ |
| 2. $X < -2$ | 7. $X \geq -4$ | |
| 3. $X > 7$ | 8. $X \leq -3$ | |
| 4. $X \geq 5$ | 9. $X < 9$ | |

5. $X \leq -2$

10. $X > 6$

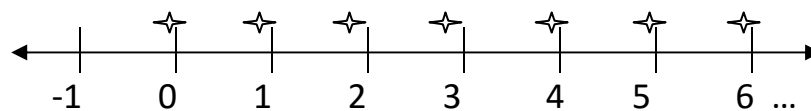
SOLUTION SETS

- Solution set on a number line.
- Identify the integer on a number line.
- Find the inequality set shown on the number line the dotted integers represent a set of integers greater than or equal to a 0.

Example:

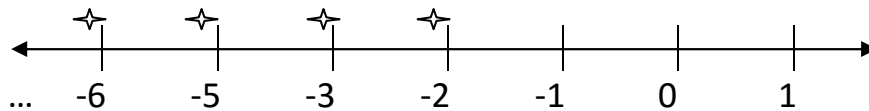
1. Find the inequality represented on a number line.

The solution set on the number line below is



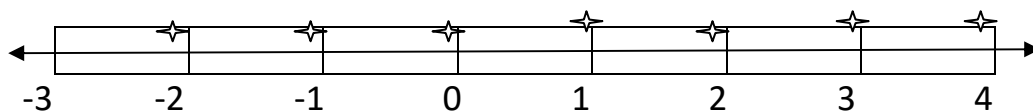
$\therefore x > -1$ or $X \geq 0$

2. Find the inequality set shown below.



$\therefore x > -1$ or $x \leq -2$

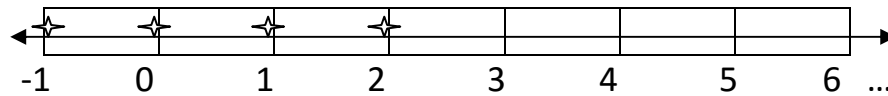
3. Find the inequality shown below.



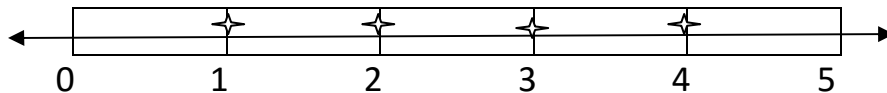
\therefore The inequality shown on the number line is $-3 < x < 5$ or $5 > X > -3$

Exercise: Find the inequalities for the solution sets on the number lines.

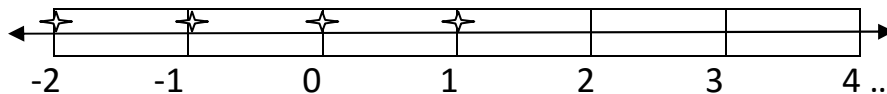
1.



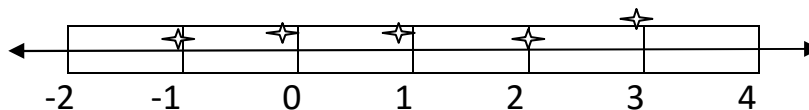
2.



3.



4.



SOLUTION SETS

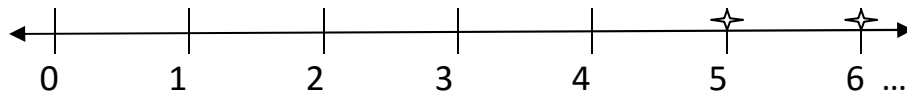
- Solving inequalities and finding solution sets.
- Solving the inequality.
- Use of number line for solution set.
- Finding solution set.

Examples:

Solve and find solution sets in inequalities.

1. Solve: $3x \geq 12$

$$\begin{array}{r} 3x \geq 12 \\ \hline 3 \quad 3 \\ \hline x \geq 4 \end{array}$$

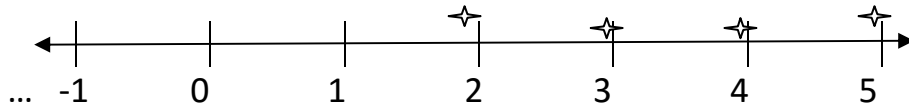


∴ The solution set for $x = \{ 5, 6, 7 \dots \}$

3. Solve: $3x \leq 15$

$$3x \leq 15$$

$$\begin{array}{r} 3x \leq 15 \\ \hline 3 \quad 3 \\ \hline x \leq 5 \end{array}$$



∴ The solution set for $x = \{ 5, 4, 3, 2, \dots \}$

Exercise: Solve and find the solution set:

1. $2x < 4$

5. $5x \geq 30$

9. $4x \geq 12$

2. $3x > 21$

6. $7x \leq 42$

3. $3x \leq 18$

7. $4x < 16$

4. $6x \leq 24$

8. $5x \leq 25$

SOLUTION SETS

- Solving and finding solution sets in inequalities.
- Solving the inequality.

- Use of a number line for solution set.
- Finding the solution set.

Examples:

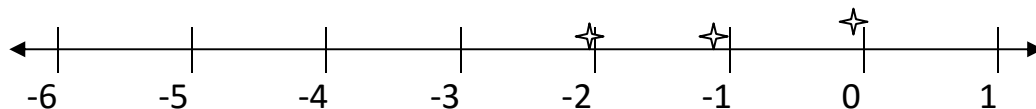
Solve and find solution sets in inequalities:

1. Solve: $4x \geq -12$

$$4x \geq -12$$

$$\frac{4x}{4} \geq \frac{-12}{4}$$

$$x \geq -3$$



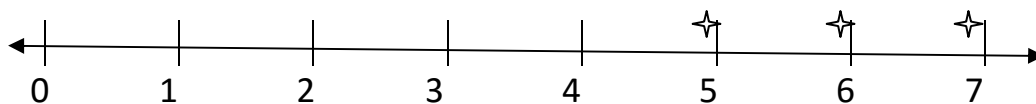
∴ The solution set for $X = \{-2, -1, 0, 1, \dots\}$

2. Solve: $-5x \leq -20$

$$-5x \leq -20$$

$$\frac{-5x}{-5} \leq \frac{-20}{-5}$$

$$x \geq 4$$



∴ The solution set for $X = \{5, 6, 7, 8, \dots\}$

Exercise: Solve the inequalities and find the solution sets:

1. Solve: $2x \leq -10$

5. Solve: $-4x \leq -24$

2. Solve: $6x \geq -18$

6. Solve: $3x \geq -27$

3. Solve: $-7x < 21$

4. Solve: $-11x \leq 24$

7. Solve: $-5x \leq 30$

8. Solve: $-6 > -36$

SOLUTION SETS

- Solving inequalities and finding solution sets.
- Solving the inequality.
- Use of number line for solution set.
- Finding the solution set.

Examples: Solve the inequality and find the solution set.

1. Solve: $2x + 4 > 8$

$$2x + 4 > 8$$

$$2x + 4 - 4 > 8 - 4$$

$$2x > 4$$

$$\begin{array}{r} 1 \qquad 2 \\ \cancel{2}x > \cancel{4} \\ \cancel{2} \qquad \cancel{2} \\ 1 \qquad 1 \end{array}$$

$$x > 2$$

The solution set for $x = \{ 3, 4, 5, \dots \}$

2. Solve and find the solution set.

Solve: $3x - 3 < 12$

$$3x - 3 < 12$$

$$3x - 3 + 3 < 12$$

$$3x < 15$$

$$\begin{array}{r} 1 \qquad 5 \\ \cancel{3}x < \cancel{15} \\ \cancel{3} \qquad \cancel{3} \\ 1 \qquad 1 \end{array}$$

$$x < 5$$

The solution set for $x = \{ \dots 3, 4 \}$

Exercise: Solve the inequalities and find the solution set.

1. Solve: $x + 2 \geq 4$

2. Solve: $2x + 2 < 16$

3. Solve: $3x + 3 \leq 9$

4. Solve: $3x + 8 \geq 11$

5. Solve: $x - 3 < 3$

6. Solve: $3x - 6 \geq 3$

7. Solve: $2x - 2 \leq 14$

8. Solve: $4x - 9 < 11$

9. Solve: $5x - 3 > 12$

SOLUTION SETS

- Solving the inequalities and finding solution sets.
- Use of number line for solution set.
- Finding the solution set.

Examples: Solve the inequality and find the solution set.

1. Solve: $3x + 9 \leq 21$

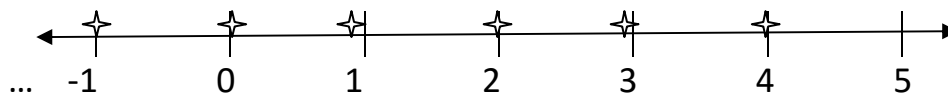
$$3x + 9 \leq 21$$

$$3x + 9 - 9 \leq 21 - 9$$

$$3x \leq 12$$

$$\overset{1}{\cancel{3}}x \leq \overset{4}{\cancel{12}}$$

$$x \leq 4$$



\therefore The solution set for $x = \{4, 3, 2, 1, 0, -1, \dots\}$

2. Solve: $4x - 8 \geq 16$

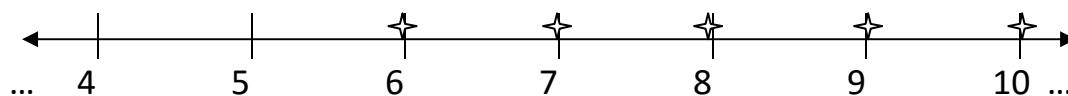
$$4x - 8 \geq 16$$

$$4x - 8 + 8 \geq 16 + 8$$

$$4x \geq 24$$

$$\overset{4}{\cancel{4}}x \geq \overset{6}{\cancel{24}}$$

$$x \geq 6$$



∴ The solution set for $x = \{ 6, 7, 8, 9, \dots \}$

Exercise: Solve and find the solution set.

1. Solve: $3x + 8 \leq 16$

2. Solve: $4x + 9 \geq 17$

3. Solve: $5x + 7 \leq -27$

4. Solve: $5x - 6 \geq 14$

5. Solve: $4x - 8 \geq 12$

6. Solve: $3x - 12 \leq 9$

7. Solve: $2x - 5 \geq 11$

8. Solve: $7x - 3 \geq 18$

SOLUTION SETS

- Solving the inequalities and finding solution set.
- Solving the inequality.
- Use of the number line for solution set.
- Finding the solution set.

Example:

If x is a whole number, what is the solution set for $3(x - 1) \geq 15$?

1. $3(x - 1) \geq 15$

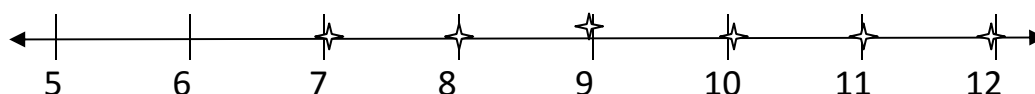
$3x - 3 \geq 15$

$3x - 3 + 3 \geq 15$

$3x \geq 18$

$$\frac{3x}{3} \geq \frac{18}{3}$$

$$x \geq 6$$



∴ The solution set for $X = \{ 7, 8, 9, 10, \dots \}$

Exercise: Solve and find the solution set.

1. If X is a whole number, what is the solution set for $3x + 4 \geq 7$?
2. If X is a whole number, what is the solution set for $4x - 5 \leq 7$?
3. If X is a whole number, what is the solution set for $2(X + 1) \leq 4$?
4. Given that X is a whole number, what is the solution set for $2(X + 1) \leq 14$?

- **SOLVING THE INEQUALITIES AND FINDING SOLUTION SETS.**
- **Use of a number line for solution set.**
- **Finding the solution set.**

Examples:

1. Solve and find the solution set.

Solve: $\frac{X}{3} \geq 1$

$$3 \times \frac{X}{3} \geq \frac{1}{1} \times 3$$

$$X \geq 3$$



\therefore The solution set for X = { 4, 5, 6, ... }

2. Solve and find the solution set.

Solve: $\frac{2x}{5} < 4$

$$\frac{2x}{5} < \frac{4}{1}$$

(LCM = 5)

$$5 \times \frac{2x}{5} < \frac{4}{1} \times 5$$

$$\begin{array}{rcl}
 & 5 & 1 \\
 \frac{2x}{2} & \angle & \frac{20}{2} \\
 x & \angle & 10
 \end{array}$$

Exercise: Solve and find the solution set:

1. Solve: $\frac{x}{5} \angle 4$

2. Solve: $\frac{x}{7} \rhd 4$

3. Solve: $\frac{x}{3} \geq 5$

4. Solve: $\frac{x}{4} \geq 8$

5. Solve: $\frac{3x}{8} \angle 6$

6. Solve: $\frac{2x}{9} \angle 4$

7. Solve: $\frac{4x}{7} \rhd 4$

8. Solve: $\frac{2x}{3} \angle 8$

SOLVING INEQUALITIES AND FINDING SOLUTION SETS.

- Solving the inequality.
- Use of number line for solution set.
- Finding the solution set.

Examples:

1.(a) Solve and find the solution set.

Solve set method 1

$$\frac{1x}{3} + 2 \angle 4$$

$$\frac{1}{3}x + 2 - 2 \angle 4 - 2$$

$$\frac{1x}{3} + 2 - 2 \angle 4 - 2$$

$$\begin{array}{rcl}
 3 \times \frac{1x}{3} & \angle & \frac{2}{1} \times 3 \\
 x & \angle & 6
 \end{array}$$

Solve set method 2

$$\frac{1x}{3} + 2 \angle 4$$

$$\frac{1}{3}x + \frac{2}{1} \angle \frac{4}{1}$$

$$\left(3 \times \frac{1x}{3} \right) + \left(\frac{2}{1} \times 3 \right) \angle \left(\frac{4}{1} \times 3 \right)$$

$$x + 6 \angle 12$$

$$x + 6 - 6 \angle 12 - 6$$

$$x \angle 6$$



∴ The solution set for $x = \{5, 4, 3, 2, 1, 0, -1, \dots\}$



∴ The solution set for $x = \{5, 4, 3, 2, 1, 0, -1, \dots\}$

Exercise: Solve and find the solution set.

1. Solve: $\frac{x}{4} + 2 \leq 4$

2. Solve: $\frac{x}{7} + 4 \leq 6$

3. Solve: $\frac{3x}{10} + 6 > 8$

4. Solve: $\frac{1x}{4} + 2 < 3$

5. Solve: $\frac{1x}{3} + 3 > 5$

6. Solve: $\frac{x}{6} + 7 \leq 12$

7. Solve: $\frac{2x}{3} + 2 > 4$

SOLVING INEQUALITIES AND FINDING SOLUTION SETS.

- Use of number line for solution set.
- Finding the solution set.

Examples:

1. Solve and find the solution set.

Solve: $8 \geq 2x \geq 2$

$8 \geq 2x \geq 2$

$$\frac{8}{2} \geq \frac{2x}{2} \geq \frac{2}{2}$$

$4 \geq x \geq 1$

$x \geq 1$

$x \leq 4$

2. Solve and find the solution set.

Solve: $10 < 5x < 25$

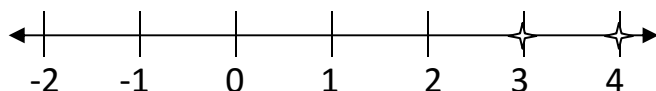
$10 < 5x < 25$

$$\frac{10}{5} < \frac{5x}{5} < \frac{25}{5}$$

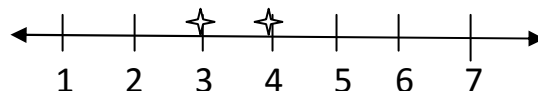
$2 < x < 5$

$x > 2$

$x < 5$



∴ The solution set for $x = \{3, 2\}$



∴ The solution set for $x = \{3, 4\}$

Exercise: Solve and find the solution set:

1. Solve: $4 > 2x > 2$

2. Solve: $12 > 3x > 6$

3. Solve: $8 < 4x < 20$

4. Solve: $36 > 6x > 18$

5. Solve: $-15 < 3x < 24$

6. Solve: $10 < 2x < 4$

SOLUTION SETS

- Solving inequalities and finding solution sets.
- Solving the inequality.
- Use of a number line.
- Finding the solution set.

Examples:

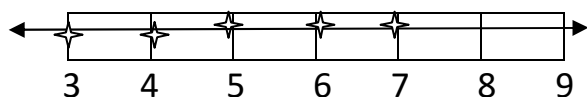
1. Solve and find the solution set.

Solution set.

Solve: $9 \leq 3x \leq 21$

$$\frac{9}{3} \leq \frac{3x}{3} \leq \frac{21}{3}$$

$3 \leq x \leq 7$



∴ The solution set for $x = \{3, 4, 5, 6, 7\}$

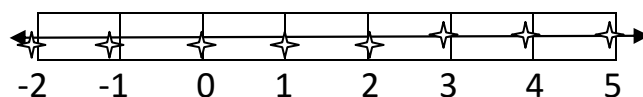
2. Solve and find the solution set.

Solve: $10 \geq 2x \geq -4$

$10 \geq 2x \geq -4$

$$\frac{10}{2} \geq \frac{2x}{2} \geq \frac{-4}{2}$$

$5 \geq x \geq -2$



∴ The solution set for $x = \{-2, -1, 0, 1, 2, 3, 4, 5\}$

Exercise: Solve and find the solution set:

1. Solve: $6 \leq 2x \leq 18$

2. Solve: $36 \geq 6x \geq 18$

3. Solve: $-15 \leq 3x \leq 24$

4. Solve: $-6 \geq 2x \geq 8$

5. Solve: $12 \leq 4x \leq 18$

6. Solve: $24 \geq 6x \geq 12$

- Solving inequalities and finding solution sets.
- Solve the inequality.
- Use of number line
- Finding the solution set.

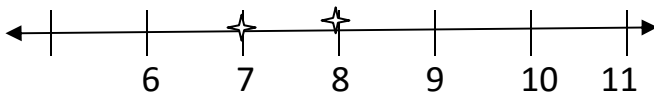
Example:

1. Solve and find the solution set.

$$8 < x + 1 < 11$$

$$8 - 1 < x + 1 - 1 < 11 - 1$$

$$7 < x < 10$$



\therefore The solution set for $x = \{ 8, 9 \}$

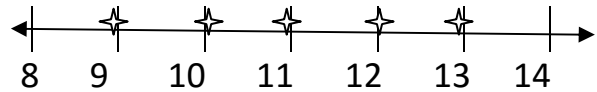
2. Solve and find the solution set.

$$\text{Solve: } 7 < x - 1 < 13$$

$$7 < x - 1 < 13$$

$$7 + 1 < x - 1 + 1 < 13 + 1$$

$$8 < x < 14$$



\therefore The solution set for $x = \{ 9, 10, 11, 12, 13 \}$

Exercise:

Solve and find the solution set.

1. Solve: $8 < 2x - 4 < 12$

$$8 < 2x - 4 < 12$$

$$8 + 4 < 2x - 4 + 4 < 12 + 4$$

$$12 < 2x < 16$$

$$\frac{12}{2} < \frac{2x}{2} < \frac{16}{2}$$

$$6 < x < 8$$



∴ The solution set for $x = \{ 7 \}$

2. Solve: $7 < 3x + 1 < 16$
3. Solve: $18 < 3x + 3 < 27$
4. Solve: $27 > x - 6 > 4$
5. Solve: $18 > 4x - 2 > 10$
6. Solve: $14 > 2x - 2 > 10$

- Solving inequalities and finding solution sets.
- Solve the inequality.
- Use of number line.
- Finding the solution set.

Example:

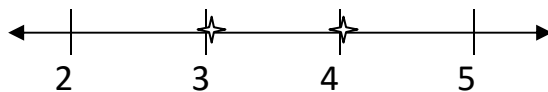
1. Solving and find solution set in inequalities.

$$\begin{aligned}
 \text{Solve: } 9 &\geq x + 3 \geq 3 \\
 9 &\geq x + 3 \geq 3 \\
 9 - 3 &\geq x + 3 \geq 3 \\
 6 &\geq x \geq 0
 \end{aligned}$$



∴ The solution set for $x = \{ 0, 1, 2, 3, 4, 5, 6 \}$

2. Solve: $14 \geq 5x - 6 \geq 9$
- $$\begin{aligned}
 14 &\geq 5x - 6 \geq 9 \\
 14 + 6 &\geq 5x - 6 + 6 \geq 9 + 6 \\
 20 &\geq 5x \geq 15 \\
 \frac{20}{5} &\geq \frac{5x}{5} \geq \frac{15}{5} \\
 4 &\geq x \geq 3
 \end{aligned}$$



∴ The solution set for $x = \{3, 4\}$

Exercise: Solve and find the solution set.

1. Solve: $21 \geq x - 6 \geq 4$

2. Solve: $6 \leq x - 1 \leq 15$

3. Solve: $8 \leq x - 4 \leq 14$

4. Solve: $5 \leq 2x + 1 \leq 11$

5. Solve: $7 \leq 2x + 1 \leq 13$

6. Solve: $-2 \leq x + 2 \leq 6$

7. Solve: $13 \geq 3x - 2 \geq 7$

GRAPHS AND INTERPRETATION OF INFORMATION.

- STATISTICS:

- Mode is the common number in a group of items.
- Modal frequency is the number of times the mode appears.

Examples:

1. We recorded marks of P. 6 ad follows:

60, 40, 60, 70, 60, 40, 60, 80, 50, 70

(a) Find the mode:

Marks	Freq.
40	2
50	1
60	4
70	2
80	1

∴ The mode is 60

(b) Find the modal frequency.

∴ The modal frequency is 4.

2. Find the mode and modal frequency in 3, 7, 5, 7, 13.

Mark	Freq.
3	1
5	1
7	2
13	1

∴ The mode is 7.

And the modal frequency is 2.

Exercise:

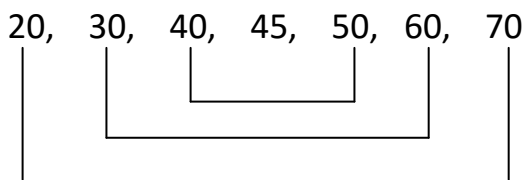
1. Find the mode and modal frequency of 37, 40, 39, 38, 42, 39, 40, 39, 37.
2. A farmer collected the following litres of milk: 55, 48, 45, 52, 40, 48.
3. Find the mode and modal frequency.
4. The marks below were scored in a Maths test: 75, 71, 80, 65, 72, 84, 63, 79, 76, 82, 72, 66, 62, 69, 64.
 - a) Find the mode.
 - b) Find the modal frequency.

GRAPHS AND INTERPRETATION OF INFORMATION.

- **STATISTICS.**
- Finding median.
- Median is the middle number when scores are arranged in order of size.

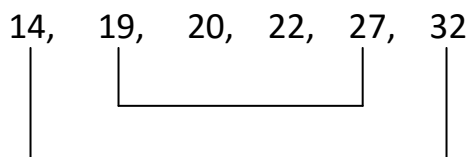
Examples:

1. Find the median of the following: 40, 60, 20, 30, 50, 70, 45.



∴ The median is 45.

2. Find the median of 14, 19, 27, 22, 32, 20.



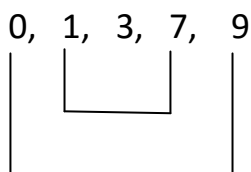
$$\text{The median} = \frac{20 + 22}{2}$$

$$= \frac{42}{2}$$

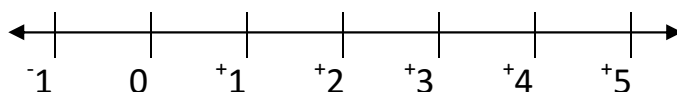
$$\therefore \text{The median} = 21$$

Exercise:

1. Find the median of: 3, 7, 0, 1 and 9.



The median of 7 consecutive integers is +2. Find the integers.



\therefore The integers are: $\{ -1, 0, +1, +2, +3, +4, +5 \}$

2. Find the median of: 80, 90, 66, 70
3. Find the median of +6, -9, 0, -3, +4, -2.
4. Find the median of: 7, 4, 2, 1, 3, 1, 1, 2, 5, 6.
5. The median of 5, negative integers is -4. Find the integers.

DATA HANDLING.

- **STATISTICS:**
- Finding range

Range = Highest - Lowest.

Examples:

1. Find the range of 40, 48, 13, 21 and 30.

$$\text{Highest} = 48$$

$$\text{Lowest} = 13$$

$$\text{Range} = \text{Highest} - \text{Lowest}$$

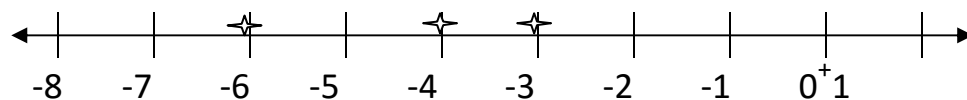
$$= 48 - 13$$

$$\text{Range} = 35$$

2. Find the range of: -4 , $+1$, 0 , -8 , -3

Small

big



$$\text{Range} = \text{Highest} - \text{Lowest}$$

$$\text{Range} = +1 - -8$$

$$= +1 - (-8)$$

$$\text{Range} = +9$$

3. The range of two numbers is -5. If one is them is 5. Find the second number.

$$\text{Highest} - \text{Lowest} = \text{Range}$$

$$5 - L = -5$$

$$5 - 5 - L = -5 - 5$$

$$-L = -10$$

$$\underline{-L} = \underline{-10}$$

$$-1 = -1$$

$$\underline{L} = \underline{10}$$

Exercise: Finding average.

- | | |
|--|---|
| <ol style="list-style-type: none">1. Find the average of: 10, 13, 15, and 14.2. Find the mean of: $3b$, $2n$, b, $6n$.3. Find the average of: $3y$, 3, 0, $3y$ and 2.4. Find the average of x, $2x - 1$, $2x$, $x - 4$.5. Find the mean of: y, $y + 4$, $y + 2$. | <ol style="list-style-type: none">6. Find the mean of:
y, $2y$, $6y + 4$ and $3y$.7. Find the average of:
4, $4a$, 3, 0, $2a$ and 5. |
|--|---|

DATA HANDLING.

- **STATISTICS.**
- Word problems on average (mean).
- Using the given items and average then find the missing number.

Examples:

1. The average of: 68, 67, 93, x and 54 is 70. Find the value of x .

$$\frac{\text{Total}}{\text{No. of items}} = \text{Average.}$$

$$\frac{68 + 67 + 93 + x + 54}{5} = 70$$

$$\frac{282 + x}{5} = \frac{70}{1}$$

$$\cancel{5} \times \frac{282 + x}{\cancel{5}_1} = 70 \times 5$$

$$X + 282 = 350$$

$$X + 282 - 282 = 350 - 282$$

$$\underline{\underline{X = 68}}$$

2. The average weight of 3 men is 81 kgs. If two of them are 69 kg and 75 kgs. Find the weight of the 3rd man. Let the 3rd man be y .

$$\frac{\text{Total}}{\text{No. of items}} = \text{Average}$$

$$Y + 69 + 75 = 81 \text{ kg}$$

$$\frac{1}{3} \times (Y + 144) = \frac{(81 \times 3)}{1} \text{ kg}$$

$$Y + 144 = 243$$

$$Y + 144 - 144 = 243 - 144$$

$$Y = 99 \text{ kg}$$

\therefore The 3rd man is 99 kg.

Exercise:

1. The average age of five pupils is 18 years. Their ages are: 16, 19, 18, 22, and y. Find y.
2. The mean of: 2k, k, 2k, 0 and 5 is 5. Find the value of k.
3. The mean of (x - 1), 2x, (3x + 5) and (x - 3) is 6. Find the value of x.
4. The mean of: 6, 5, 3 and x is 6. Find the value of x.

DATA HANDLING:

- **STATISTICS**
- Finding mean, mode, median, modal, frequency and range.
- Using the data to find the given items.

Examples:

1. A boy scored the following marks: 60, 40, 70, 60, 80. Find:
(a) Modal mark;

Mark	Freq.
40	1
60	2
70	1
80	1

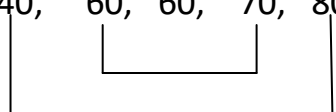
\therefore The modal mark is 60.

(b) Find the modal frequency.

∴ The modal frequency is 2.

(c) Find the median;

Median: 40, 60, 60, 70, 80



∴ The median is 60.

(d) Find the range.

Range = Highest - Lowest

Range = 80 - 40

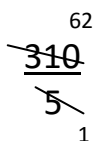
Range = 40

(e) Find the mean

Mean = $\frac{\text{Total}}{\text{No. of items}}$

Mean = $\frac{40 + 60 + 60 + 70 + 80}{5}$

Mean = $\frac{310}{5}$



Mean = 62.

Exercise:

1. Given the following scores; 17, 12, 14, 17, 19, 15, 12 and 17.

Find; (a) Mode

(b) Modal frequency

(c) Median

(d) Range

(e) Mean

DATA HANDLING

- (Finding mean, mode) STATISTICS.
- Find mean, mode, median, mode frequency and range.
- Using the table to interpret the given information.

Example:

The table below shows the daily sales from a fish monger.

Day	Mon.	Tue.	Wed.	Thur.	Fri.	Sat.	Sun
Sales	8	22	19	8	23	30	44

(a) Find the mean daily sales.

$$\text{Mean} = \frac{\text{Total}}{\text{No. of items}}$$

$$= \frac{8 + 22 + 19 + 8 + 23 + 30 + 44}{7}$$

$$= \frac{154}{7}$$

$$\text{Mean} = 22 \text{ fish.}$$

(b) Find the mode sales

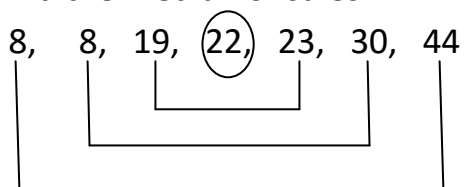
Mode is 8 fish

(c) Range = Highest - Lowest

$$= 44 - 8$$

Range = 36 fish.

(d) Find the median of sales



Median is 22 fish

Exercise:

1. The table shows the number of mangoes Barbra collected from her tree in a week.

Day	Mon.	Tue.	Wed.	Thur.	Fri.	Sat.	Sun.
No. of mangoes	10	12	18	10	10	16	15

- (a) Find the mode. (d) Find the range.
 (b) Find the modal frequency. (e) Find the mean.
 (c) Find the median.

- Finding mean, mode, median , range and modal frequency.
- Using the table to interpret the given information.

Example:

The table below shows marks obtained by some pupils in different tests.

Complete the table.

Name	Mark	Frequency	Total
Mary	50	3	<u>150</u>
Annet	80	<u>3</u>	240
Betty	<u>30</u>	5	150
Tina	60	<u>3</u>	180
Cindy	40	6	<u>240</u>

$$50 \times 3 = 150$$

$$240 \div 80 = 3$$

$$150 \div 5 = 30$$

$$180 \div 60 = 3$$

$$40 \times 6 = 240$$

Exercise: Study and complete the table.

The table below shows marks scored by some pupils.

Pupil	Marks	Frequency	Total
A	70	—	350
B	95	2	—
C	—	2	240
D	85	—	255
E	—	4	240

- (a) The mean (d) The range (e) The frequency.
(b) The mode (e) The median

The table below shows marks scored by P. 6 pupils in a Maths test.

Marks	40	50	60	70	80
No. of pupils	5	7	4	2	1

- (d) Find the mean.

Mark	Freq.
40	6
50	7
60	2
70	3
80	1

$$\begin{aligned} \text{Mean} &= \frac{\text{Total}}{\text{No. of items}} \\ &= \frac{(40 \times 5) + (50 \times 7) + (60 \times 2) + (70 \times 2) + (80 \times 2)}{5 + 7 + 4 + 2 + 2} \\ &= \frac{200 + 350 + 240 + 140 + 160}{20} \\ &= \frac{1090}{20} = 54\frac{1}{2} \end{aligned}$$

- ∴ The modal frequency is 7.

- Range = Highest - Lowest
Range = 80 - 40
Range = 40

The table below shows marks scored by P. 7 pupils.

Marks	60	80	50	45
No. of pupils	2	1	3	4

- Find the mode.
- Find the modal frequency.
- Find the median.
- Find the mean.
- Find the range.

- Finding the missing value given mean and finding range, median, mode, modal frequency, number of items.
- Using the table to interpret the given information.

Example:

The table below shows marks scored by P. 7 pupils. Study and use it to answer questions.

Marks	60	80	70	90
Frequency	X	2	1	3

(a) Find the value of c, if the mean is 74.

$$\frac{\text{Total}}{\text{No. of items}} = \text{mean}$$

$$\frac{(60 \times X) + (80 \times 2) + (70 \times 1) + (90 \times 3)}{X + 2 + 1 + 3} = 74$$

$$\frac{60X + 160 + 70 + 270}{X + 6} = 74$$

$$\frac{(X + 6) \times (60X + 500)}{X + 6} = \frac{74(X + 6)}{1}$$

$$60X + 500 = 74X + 444$$

$$60X - 60X + 500 = 74X - 60X + 444$$

$$500 - 444 = 14X + 444 - 444$$

$$\begin{array}{r} 4 \\ \cancel{56} \\ \hline 14 \\ \hline 1 \end{array} = \begin{array}{r} 1 \\ \cancel{14X} \\ \hline 14 \\ \hline 1 \end{array}$$

$$4 = X$$

$$\therefore X = 4$$

(b) Find the range.

$$\text{Range} = 80 - 60$$

$$\text{Range} = 20$$

(c) Find the mode.

Mark	Freq.
60	4
80	2
70	1
90	3

\therefore The mode is 60

(d) Find the number of pupils.

Exercise: The table below shows the number of farmers who harvested vanilla in kgs.

Weight	30	60	50	40
No. of farmers	2	3	K	1

(a) Find the value of K, if the mean weight is 40 kgs.

(b) How many farmers were there?

(c) Find the modal weight of vanilla.

(d) Find the median.

(e) Find the range.

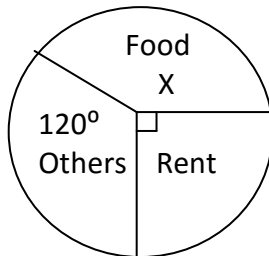
(f) Find the modal frequency.

DATA HANDLING

PIE CHARTS

- Interpreting information on a pie chart with degrees.
- Finding the unknown sector.
- Finding the unknown sector.
- Finding expenditures in each sector.

Example: The pie chart below shows how a man spends sh.600,000.



(a) Find the value of X.

$$\begin{aligned}
 x + 90^\circ + 120^\circ &= 360^\circ \\
 x + 210^\circ &= 360^\circ \\
 x + 210^\circ &= 360^\circ \\
 x + 210^\circ - 210^\circ &= 360^\circ - 210^\circ \\
 \underline{x} &= 150^\circ
 \end{aligned}$$

b) How much does he spend on each item?

Food = $\frac{150}{360} \times \frac{50000}{100000} \times \text{sh.}600,000$

$$\begin{aligned}
 &= \frac{150}{360} \times 600,000 \\
 &= \frac{150}{6} \times 100,000 \\
 &= 25 \times 100,000 \\
 &= \text{sh.}2,500,000
 \end{aligned}$$

c) Others = $\frac{120}{360} \times \text{sh.}600,000$

$$\begin{aligned}
 &= \frac{120}{360} \times 600,000 \\
 &= \frac{1}{3} \times 600,000 \\
 &= \text{sh.}200,000
 \end{aligned}$$

d) What does he spend on rent?

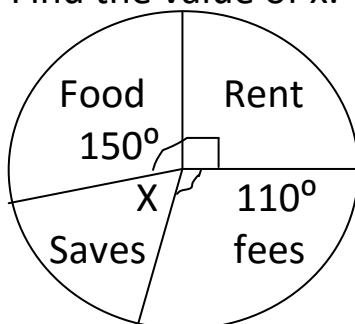
Rent = $\frac{90}{360} \times \text{sh.}600,000$

$$\begin{aligned}
 &= \frac{90}{360} \times 600,000 \\
 &= \frac{1}{4} \times 600,000 \\
 &= \text{sh.}150,000
 \end{aligned}$$

Exercise:

The circle graph below shows how Mr. Kayizi spends his monthly salary of sh.108,000.

a) Find the value of x.



(b) How much does he spend on Rent?

(c) How much more does he spend on food than fees?

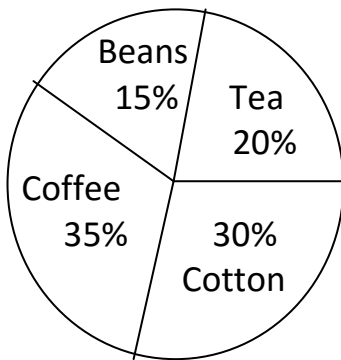
(d) How much money is saved?

DATA HANDLING - PIE CHARTS

- Interpreting information on a pie chart with percentages.
- Finding expenditures in each sector.

Example:

The circle graph below shows different items a country exports. If the country collects 800 billions.



(a) How much is collected from coffee?

$$\begin{aligned}\text{coffee} &= \frac{35}{100} \times \text{sh.800 billion} \\ &= \text{sh.280 billion}\end{aligned}$$

(b) How much is collected from cotton?

$$\begin{aligned}\text{Cotton} &= \frac{30}{100} \times \text{sh.800 billion} \\ &= \text{sh.240 billion}\end{aligned}$$

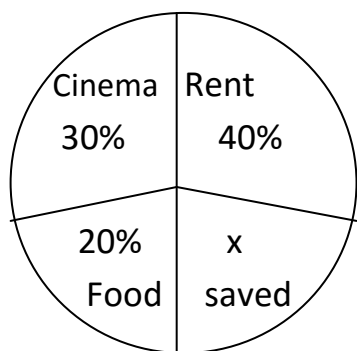
(c) How much more is collected from tea than beans?

Tea	20%		$\frac{5}{100} \times \text{sh.800 billion}$
Beans	- 15%		
	5% more		$= \text{sh.40 more billion is collected from tea than beans}$

(d) What angle represents cotton? angle for cotton $= \frac{30}{100} \times 360^\circ$
 $= 108^\circ$

Exercise:

The pie chart below shows how Mr. Waiswa spends his monthly salary of sh.180000.



(a) Find the value of x.

$$x + 30\% + 40\% + 20\% = 100\%$$

$$x + 90\% = 100\%$$

$$X + 90\% = 90\% = 100\%$$

$$\underline{x = 10\%}$$

(b) How much is spent on Rent?

(c) How much more is spent on cinema than food?

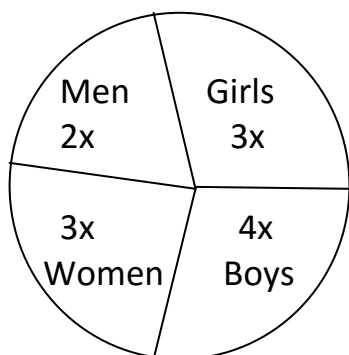
(d) Find the angle for Rent.

(e) What fraction is spent for food?

PIE CHARTS

- Interpreting a pie chart with the unknowns.
- Finding the values and items on each sector.

Example:



The pie chart shows a town of 36,000 people.

(a) How many girls are in the town?

$$3x + 4x + 3x + 2x = 360^\circ$$

$$\underline{12x = 360^\circ}$$

$$\underline{12} \quad \underline{12}$$

$$\underline{x = 30^\circ}$$

$$\text{Girls} = 3X$$

$$= 3 \times X$$

$$= 3 \times 30$$

$$= 90^\circ$$

$$= \frac{90}{30} \times 36000$$

$$\underline{30}$$

$$\text{Girls} = \underline{9000 \text{ girls}}$$

b) Find the number of boys

$$\text{Boys} = 4X$$

$$= 4 \times 30^\circ$$

$$= 120^\circ$$

$$\text{No. of boys} = \frac{120}{360} \times 36000$$

$$\text{No. of boys} = 12000 \text{ boys}$$

c) What fraction are men?

$$\text{Men} = 2x$$

$$= 2 \times x$$

$$= 2 \times 30^\circ$$

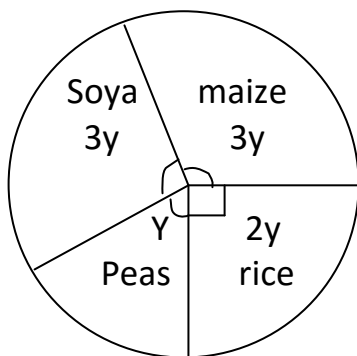
$$= 60^\circ$$

$$\text{Fraction for men} = \frac{60}{360}$$

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

Exercise:

The pie chart shows Mr. Ali collected from his farm.



(a) Find the value of y.

(b) Find each sector in degrees?

(c) How many were collected for; (i) Maize (iv) Peas
(ii) Soya
(iii) Rice

(d) How many more bags were for maize than rice?

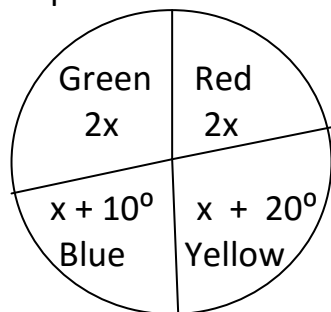
(e) What fraction was for rice?

(f) What percentage was collected for soya?

- Interpreting a pie chart with the unknowns.
- Finding the values and quantities in each sector.

Example:

The pie chart below shows the number of pupils in the different houses.



If the school had 432 houses.

(a) Find the value of x.

$$x + 10^\circ + x + 20^\circ + 2x + 2x = 360^\circ$$

$$6x + 30^\circ = 360^\circ$$

$$6x + 30^\circ - 30^\circ = 360^\circ - 30^\circ$$

$$12$$

$$\frac{6x}{6} = \frac{330^\circ}{6}$$

$$x = 55^\circ$$

(b) How many pupils were in green house?

$$\text{Green} = 2x$$

$$\text{Green} = \frac{110^\circ}{72} \times 432$$

$$= 2 \times x$$

$$= 2 \times 56^\circ$$

$$\frac{360}{6}$$

$$\text{Green} = 132 \text{ pupils}$$

(c) How many more pupils were in Yellow than Blue house?

$$\begin{aligned} \text{Yellow} &= x + 20^\circ \\ &= 55^\circ + 20^\circ \\ &= 75^\circ \end{aligned}$$

$$\begin{aligned} \text{Blue} &= x + 10^\circ \\ &= 55^\circ + 10^\circ \\ &= 65^\circ \end{aligned}$$

$$= \text{Yellow} - \text{Blue}$$

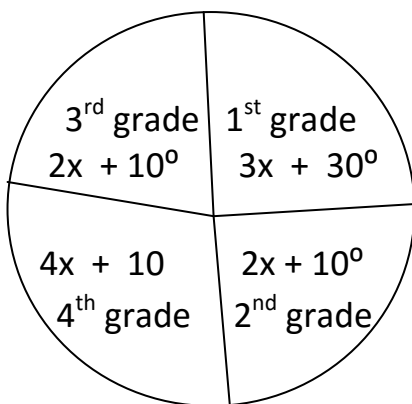
$$= 75^\circ - 65^\circ$$

$$\frac{10}{360} \times 432 \text{ house}$$

$$= 12 \text{ more pupils in yellows}$$

Exercise:

The pie chart represents the grades obtained by 420 pupils in Nyangoma P. S in PLE.



(a) Find the value of x.

(b) How many pupils got 4th grade?

(c) How many more pupils got 1st grade than 3rd grade?

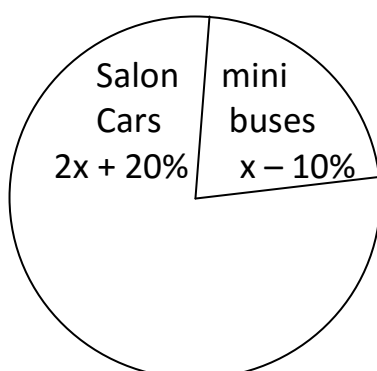
PIE CHART

- Interpreting pie charts with unknowns involving percentages.
- Finding the values and quantities in each sector.

Example:

The pie chart below represents vehicles which were imported in a country in one month. If there were 800 vehicles.

(a) Find the value of x.



$$2x + 20\% + x + 20\% + 2x + 40\% + x - 10\% = 100\%$$

$$6x + 80\% - 10\% = 100\%$$

$$6x + 70\% = 100\%$$

$$6x + 70\% - 70\% = 100\% - 70\%$$

$$\begin{array}{l} X + 20\% \\ \text{Pick ups} \end{array} \quad \begin{array}{l} 2x + 40\% \\ \text{motor} \\ \text{Cycle} \end{array}$$

$$\begin{array}{rcl} 6x & = & 30\% \\ \frac{6x}{6} & = & \frac{30\%}{6} \\ x & = & 5\% \end{array}$$

(b) How many pick ups were there?

$$\begin{aligned} \text{Pick ups} &= x + 20\% \\ &= 5\% + 20\% \\ &= 25\% \end{aligned}$$

$$\begin{aligned} \text{Pick ups} &= \frac{25}{100} \times 400 \\ &= 100 \text{ pick ups} \end{aligned}$$

(c) How many more salon cars were there than motor cycles?

$$\begin{aligned} \text{Salon cars} &= 2x + 20\% \\ &= 2 \times 5\% + 20\% \\ &= 10\% + 20\% \\ &= 30\% \end{aligned}$$

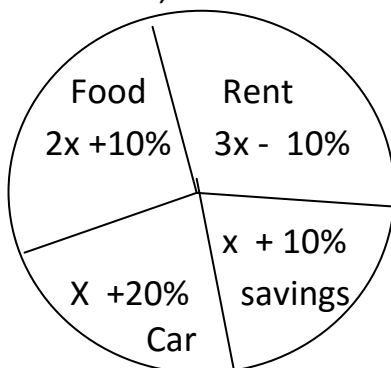
Salon cars	= 30	x 800	motor cycles	= 50	x 800
		100			100
Salon cars	= 240			= 400	

$$\begin{aligned} \text{No. of saloon than motor cycles} &= 400 - 240 \\ &= 160 \end{aligned}$$

$$\begin{aligned} \text{Motor cycles} &= 2x + 40\% \\ &= 2 \times 5\% + 40\% \\ &= 10\% + 40\% \\ &= 40\% \end{aligned}$$

Exercise:

The circle graph below represents the expenditure and savings of a family which earns sh.960,000.



(a) Find the value of x.

(b) How much is spent on cars?

(c) How much is spent on rent?

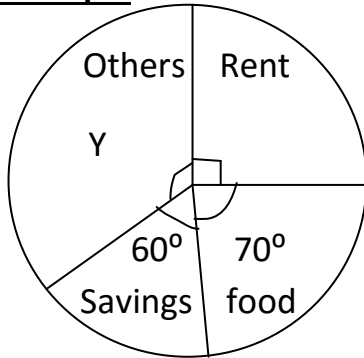
(d) How much is spent on cars than food?

PIE CHARTS

-Finding the unknown values and the total quantities when one sector is given.

- Interpreting the given circle graph. The pie chart shows how Mr. Kanya spends his monthly salary.

Example:



(a) Find the value of y .

$$y + 90^\circ + 60^\circ + 70^\circ = 360^\circ$$

$$y + 220^\circ = 360^\circ$$

$$y + 220^\circ - 220^\circ = 360^\circ - 220^\circ$$

$$y = 140^\circ$$

(b) If he spends sh.98000 on others, calculate his monthly salary.

Others is sh.98000 \longleftrightarrow 140°

140° represents sh.98000

1° represents $\frac{\text{sh.98000}}{140}$

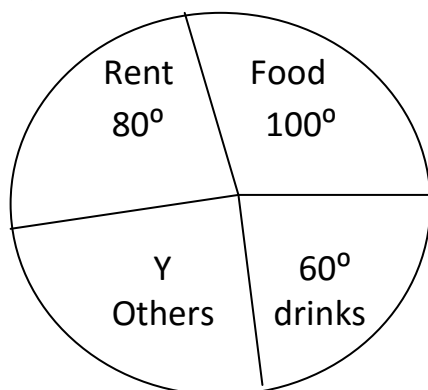
$\therefore 360^\circ$ represents $\frac{\text{sh.98000}}{140} \times 360$

360° represent sh.252000

\therefore his monthly salary is sh.252000.

Exercise:

The pie chart below shows how M.r Kateeka spends his monthly income.



(a) Find the value of y .

(b) If he spends sh.120,000 on drinks, how much does he get every month?

(c) How much more does he spend on food than rent?

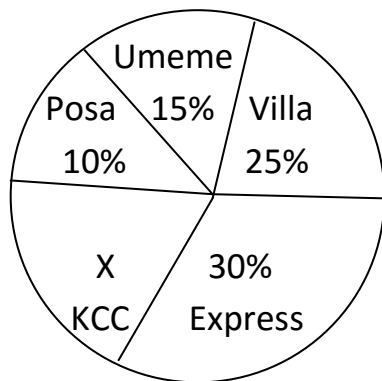
(d) What fraction does he spend on food?

(e) What percentage does he spend on drinks?

- Finding the unknown values and total quantities in a pie chart with percentages.
- Interpreting the given circle graph.

Example:

The pie chart below shows spectators who attended a football match.



(a) Find the value of x.

$$x + 10\% + 15\% + 25\% + 30\% = 100\%$$

$$x + 80\% = 100\%$$

$$x + 80\% - 80\% = 100\% - 80\%$$

$$x = 20\%$$

(b) If Express has 1260 spectators, how many people attended the football match?

Express 30% \longleftrightarrow 1260 people

30% represent 1260

1% represent $\frac{1260}{30}$

\therefore 100% represent $\frac{1260}{30} \times 100$ people

\therefore 4200 spectators attended

(c) Change the sector for Villa in degrees.

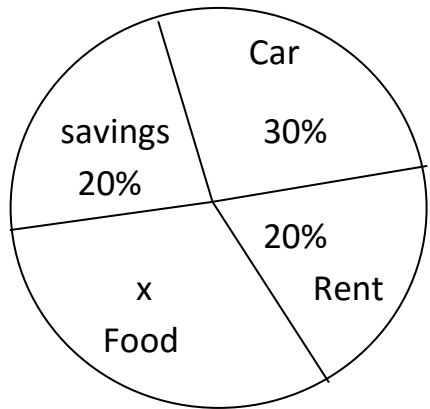
Villa = 25% of 360°

$$= \frac{25}{100} \times 360$$

Villa = 90°

Exercise:

The pie chart below shows how a family spent the income.



(a) Find the value of x.

(b) If they spent sh.192,000 on rent find their income.

(c) How much did the family spend on the car?

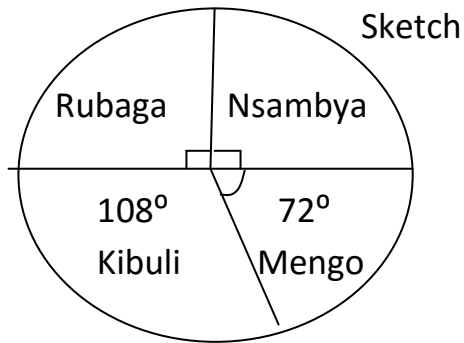
(d) Change the sector for food in degrees.

- Drawing pie charts with quantities.
- Change the quantities in degrees.
- Tabulate the information.
- Draw the pie chart.

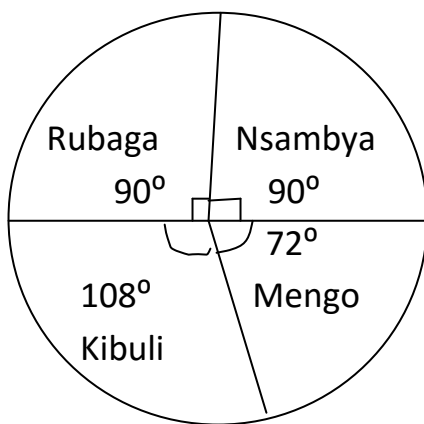
Example:

On Christmas day, babies were born as follows around Kampala. Mengo 40, Kibuli 60, Nsambya 50, Rubaga 50. Draw a pie chart to represent the above information.

Item (Hospital)	Number of babies	Fractions	Angle
Mengo	40	$\frac{40}{200} = \frac{1}{5}$	$\frac{1}{5} \times 360 = 72^\circ$
Kibuli	60	$\frac{60}{200} = \frac{3}{10}$	$\frac{3}{10} \times 360 = 108^\circ$
Nsambya	50	$\frac{50}{200} = \frac{1}{4}$	$\frac{1}{4} \times 360 = 90^\circ$
Rubaga	50	$\frac{50}{200} = \frac{1}{4}$	$\frac{1}{4} \times 360 = 90^\circ$
Total	200		



Accurate



Exercise

The school bursar spent the following money she got as follows;

sh.20000 on meat

sh.30000 on bananas

sh.40000 on posho

Show the above information on a circle graph of radius 4 cm.

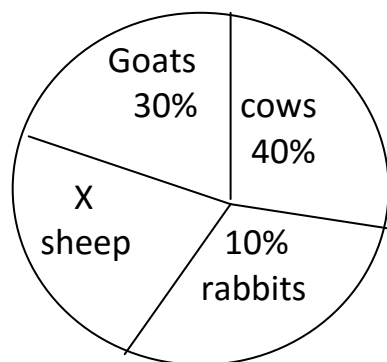
- Drawing a pie chart with percentage.
- Changing the percentages to degrees.
- Tabulate the information.
- Draw a pie chart.

Example:

On a farm 30% of the animals are goats, 40% are cows, 10% are rabbits and the rest are sheep.

(a) Find the percentage for sheep.

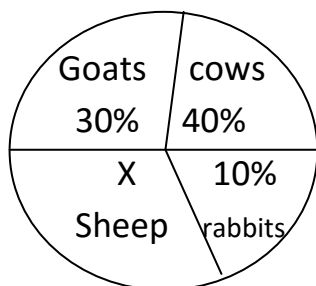
(b) Draw a circle graph to show the above information on a circle of radius 3 cm.



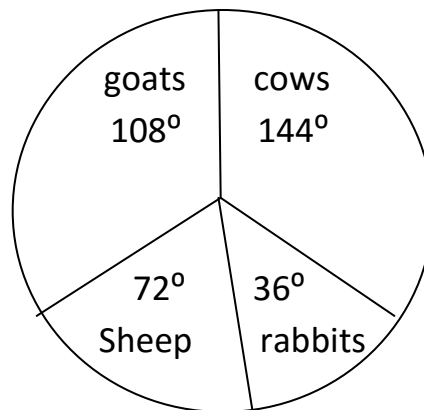
$$\begin{aligned}x + 30\% + 40\% + 10\% &= 100\% \\x + 80\% &= 100\% \\x + 80\% - 80\% &= 100\% - 80\% \\x &= 20\%\end{aligned}$$

Item (Animal)	Percentage	Fraction	Angle
Goats	30%	$\frac{30}{100} = \frac{3}{10}$	$\frac{3}{10} \times 360^\circ = 108^\circ$
Cows	40%	$\frac{40}{100} = \frac{2}{5}$	$\frac{2}{5} \times 360^\circ = 144^\circ$
Rabbits	10%	$\frac{10}{100} = \frac{1}{10}$	$\frac{1}{10} \times 360^\circ = 36^\circ$
Sheep	20%	$\frac{20}{100} = \frac{1}{5}$	$\frac{1}{5} \times 360^\circ = 72^\circ$

Sketch



Accurate



Exercise:

A man spends 35% of his money on medicine, 50% on food and saves the rest.

(a) Find the percentage for savings.

(b) Draw a pie chart of radius 4 cm to represent the above information.

- Drawing a pie chart when the sectors are not given.
- Interpreting the information.
- Find the total of the quantities.
- Drawing the pie chart.

Example:

- What fraction does he save?
- If he saves sh.60000, what is his income?
- Draw a pie chart using the above information.

Rent	Remainder	Food	R + F	Saves
$\frac{1}{4}$	$\frac{4}{4} - \frac{1}{4} - \frac{3}{4}$	$\frac{4}{9}$ of $\frac{3}{4}$ $\frac{4}{9} \times \frac{3}{4} = \frac{1}{3}$	$\frac{1}{4} + \frac{1}{3}$ $\frac{3}{12} + \frac{4}{12} = \frac{7}{12}$	$1 - \frac{7}{12}$ $\frac{12}{12} - \frac{7}{12}$

Fraction saved = $\frac{5}{12}$

Saving is $\frac{5}{12} \longleftrightarrow$ sh.60,000

5 parts rep. sh. 60,000

1 part rep. sh. 60000

5

2000

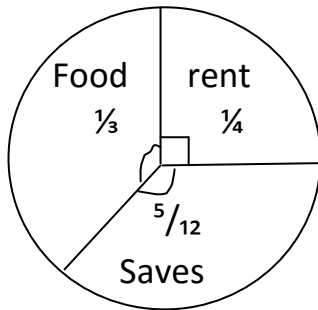
\therefore 12 parts rep ~~60000~~ x 12

~~5~~

\therefore his income is = sh.144,000

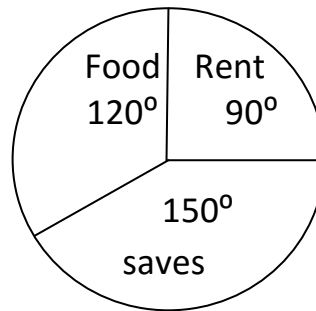
- What fraction does he save?
- If he saves sh.50,000 find his income.

Sketch



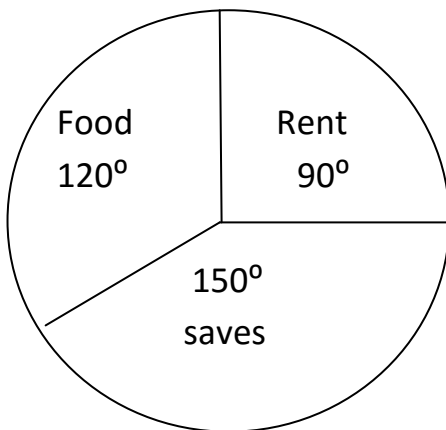
$$\begin{aligned} \text{Rent} &= \frac{1}{4} \times 360^\circ \\ \text{Rent} &= 90^\circ \end{aligned}$$

sketch



$$\begin{aligned} \text{Food} &= \frac{1}{3} \times 360^\circ \\ \text{Food} &= 120^\circ \end{aligned}$$

Accurate



Exercise:

Wachenda spends $\frac{1}{2}$ of his salary on food, $\frac{8}{9}$ of the remainder on transport and saves the rest.

- c) Construct a pie chart of radius 3.5 cm using the above information.