

TERM II

TOPIC: SPEECH

USUAL CHANGES

Changes in verbs, helping verbs, adverbs and pronouns under speech.

1. was - had been
2. were - had been
3. has - had
4. have - had
5. is - was
6. are - were
7. am - was
8. did - had
9. does - did
10. coming - going
11. going - going
12. here - there
13. my - his / her
14. mine - his / hers
15. myself - himself / herself
16. ourselves - themselves
17. You - us / me
18. Your - my / our
19. now - then
20. today - that day
21. next year - the following year
22. this - that
23. this year - that year
24. tomorrow - the next day / following day
25. yesterday - the previous day / the day before
26. will - would
27. will have - would have
28. may - might
29. shall - should / would

N.B

I, we - shall (should)

he, she, it, they - will (would)

30. might - would
31. can - could
32. I - he /she
33. we - they
34. these - those
35. our - their
36. you - we
37. tonight - that night
38. last month - the previous month
- the month before
39. a month ago - a month before
40. ago - before
41. should - had to
42. must - had to
43. yours - theirs, mine, ours, his, hers
44. your - their, my, our, his, her
45. this time - that time
46. ours - theirs
47. mine - his / hers
48. anyhow - somehow
49. anywhere - some where

SPEECH

Speech is made up of

- a) actual words (speech statement)
- b) speech tag

1. The farmer said, "I shall not sell my grains today."
2. 

“She is my sister,”
actual words

said Rose.
speech tag

(speech statement)

N.B

An exercise should be given on identifying actual words and speech tags from various speech sentences.

- It involves the use of punctuation marks like;
 - comma to separate the actual words from the speech tag.
 - Quotation marks to quote the actual words said (“”)

- Question marks to quote the actual words said in a question. (?)
- Full stop to end the speech (.)
- An exclamation mark to express wonders (!)

TYPES OF SPEECH

- a) Direct speech (Actual)
- b) In direct speech (Reported)

DIRECT SPEECH

1. This is when the actual words of the speaker are quoted without any change made.
2. It begins in open quotation marks and ends in close quotation marks. ("")
3. The actual words enclosed begin with a capital letter.
4. The closing marks are placed correctly after marks like:
 - a) "?"
 - b) "!"
 - c) ","

A) DIRECT SPEECH IN PRESENT SIMPLE TENSE

Exercise:

Change the following Direct speech sentences to indirect in present simple tense.

1. "Do you eat meat?" the butcher asked Rose.

2. "Does you aunt sell alcohol these days?" the soldier asked Benon.

3. "Do these girls read their book?" the teacher asked the class monitor.

4. "I do my gym every morning." said my uncle.

5. "Tom does a lot of work now days.," said Joggo.

6. "This boy sings well these days," said Samantha.

B) DIRECT SPEECH IN PRESENT CONTINUOUS TENSE

Exercise

Change the following Direct speech sentences to indirect in present continuous tense.

1. "He is weaving the basket now," said Alfred's sister.

2. "Our parents are writing letters to invite the guests for their wedding," said the four girls.

3. "This florist is busy weeding his flowers," said Aaron.

4. "These ferries are over loaded today," said Barbra.

5. "We are running to school now," said the athletes.

6. The boys' aunt said, "They are repairing the spoilt bicycle."

7. "These cars are mine," said Daniel.

C) DIRECT SPEECH IN PRESENT PERFECT TENSE

Change the following Direct speech sentences to indirect in present perfect tense.

Exercise

..... has had

..... have had

1. "Has Ben read any letter today?" Musa asked us.

2. "Have the seamstresses sewed our dresses?" the maids asked Rose.

3. "I have seen my shirt which was lost," Paul told Patrick.

4. "Our puppies have eaten a lot of food today," said my friend.

5. "Have these goats grazed on my millet today?" Janat asked the goat herd.

6. "Have Enyem and Winnie succeeded in the winning the race this time?"

7. "They have written good poems today," said the girls' mother.

8. "Those dogs have eaten my meat," Bob's brother told us.

D) **DIRECT SPEECH IN PRESENT PERFECT CONTINUOUS TENSE**

Exercise

Change the following Direct speech sentences to indirect in present perfect tense.

N.B

a) has been had been

..... have been had been....

1. "This cat has been eating my meat from here," said the little boy.

2. "They have been reading news from our studio," said the police.

3. "I have been checked today by these guards," Juma told the journalists.

4. "Have these traders been buying the mangoes they sell to use from here? Tendo asked.

5. "Has it been raining at your place?" Joshua asked her aunt.

6. "Our house has been burnt by my elder sister," said Willy.

7. Has your mother been coming here on Thursday?" the nurse asked the patient.

8. "We have been helping our aunt with garden work since this morning," said the quadruplets.

E) **DIRECT SPEECH IN PAST SIMPLE TENSE**

Change the following direct speech sentences to indirect in past simple tense.

N.B Use had

1. "Rose took my tea this morning," said Bernard.

2. "They did their work well this time," said the boy's brother.

3. "Did Bennah take her drugs today?" the nurse asked us.

4. "Did you friend sell my land from here?" the angry soldier asked me.

5. "Did Kaggwa win the race this time?" daddy asked us.

6. "My brother did his home work alone today," said Keefa.

7. "Our teacher taught us well this term," said the candidates.

F) **DIRECT SPEECH IN PAST CONTINUOUS TENSE**

Exercise

Change the following direct speech sentences to indirect in past continuous tense.

N.B

a) was had been

b) were had been

1. "He was good to us," said the late Janenge's sister.

2. "Was Tabu a clever boy?" Bob asked us.

3. "The stationers were selling their books cheaply," said my parents.

4. "Those boys were very lazy in class," said Madam Roseline.

5. "Joshua was reading news from my room," said Aaron.

G) DIRECT SPEECH IN PAST PERFECT TENSE

Exercise:

Change the following direct speech sentences to indirect in past perfect tense.

N.B

a) had had

1. " My puppies had fallen sick yesterday," said the rude farmer.

2. " Our teacher had sung for us today," said the learners.

3. "Their mad dog had stolen our lamb this morning," said the triplets' uncle.

4. "We had had lunch by the time you arrived." our friends told us.

5. "I had even built a hut in the village," our teacher told us.

H) DIRECT SPEECH I PAST PERFECT CONTINUOUS TENSE

Exercise:

Change the following direct speech sentences to indirect speech sentences to in direct in past perfect continuous tense

a) had been had been

1. "We had been writing to your father for the last six months," said the Lawyers.

2. " My cousin had been a school bursar at this school," said Tendo.

3. "This man had been stealing us a lot," said the town dwellers.

4. "I had been fetching water from your home alone," said Ssuna.
-

5. "It had been raining at our district since January," Rose told us.
-

FUTURE SPEECHES

I) DIRECT SPEECH IN FUTURE SIMPLE TENSE

Exercise

Change the following direct speech sentences to direct in future simple tense.

N.B

..... will would

..... can could

..... shall should/ would

..... may might

1. "They will come here today," said Mapeera's uncle.

-
2. "We shall take the lead this time," the netballers exclaimed.

-
3. "Musa may sing tomorrow," said Kamoga.
-

4. "Either Kidega or Kumasi will buy our goat," said Sailus.
-

5. "We shall pay you a visit this weekend," the nurses told Juma.
-

6. "I shall marry Hellen this year," said Ssemujju.
-

INDIRECT QUESTIONS

J) SPEECHES WITH STATEMENTS AND TAGS

Use of ;

1. Why
2. When
3. How
4. Who
5. What
6. Where
7. Which
8. Whose
9. Whom

Exercise

Change the following direct speech sentences to indirect

1. "Why did you come late today?" James asked me.

2. "When will your aunt return from Ghana?" Yeewe asked us.

3. "How much can I pay for this pen?" Alice asked the shopkeeper.

4. "Who ate my food today?" Bonny asked us.

5. "What is your brother's name?" the doctor asked my niece.

6. "Where are you going now?" daddy asked his son.

7. "Which route did your nephew take while coming here?" Mutto asked me.

K) EXCLAMATORY SENTENCES

1. These sentences show wonders in a speech.
2. They take the use of exclamation mark (!)

Exercise:

1. "What a great man your father has been!" Peter wondered.

2. "What a beautiful girl my sister is!" Juma exclaimed.

3. "What a good dress you have bought! my friend wondered.

4. "What an expensive car you are driving!" my O.B wondered.

5. "What nice coffee sets these are!" Bamuka said.

L) **INDIRECT ORDERS AND REQUESTS**

We normally use words like.

requested, ordered, told, etc

Exercise

1. "Get out of the room!" mother ordered me.
2. "Help me with a red pen, please," she requested me.
3. The doctor said to me, "Come back tomorrow."
4. "Sit down and eat your food now," he ordered my sister.
5. "Will they forgive us today?" the three thieves requested to know.
6. "Go back there today," the soldier ordered my aunt.
7. "Serve us some food now," the hungry boys asked my mum.
8. "Please, do not make noise here," the teacher requested us.

M) **BROKEN QUOTATIONS**

1. The speech words or statements are broken down into two or more parts, each separated by quotation marks and commas.
2. The speech tag is not quoted in the quotation marks.

e.g

1. Why he asked did you break my cup.
"Why," he asked, "did you break my cup?"

Exercise

Punctuate the following direct speech sentences using broken quotations.

1. When he asked will she return from America

2. Which pen he asked did you use for writing this letter

3. Oh yes she exclaimed I know him

4. no he refuted she did not do it

OPPOSITES

- Opposites are also called antonyms.
- Opposites mean the other side of any given noun, pronoun, verbs, adverb or adjective.

a) Opposite of adjectives

adjective	opposite
calm (water body)	rough
calm (creature)	rough
rough (surface)	smooth
rough (bull)	calm
rough (voice)	soft
busy	
modest	
proud	
difficult	
guilty	
giant	
fresh	
summer	
young	
reluctant	
compulsory	
slim	
slender	
quiet	
warm	
hard meat	
hard number	
hard person	
imaginary	
senior	
new	
uglier	
passive	
fair	
patient	
cruel	
polite	
cheapest	
cheaper	
oldest	
smarter	
good	
better	
best	
much	
less	
least	

b) Opposites of verbs

adjective	opposite
rejoice	
attack	
arrive	
arrived	
reached	
take	
weep	
survive	
die	
died	
pardon	
pardoned	
forgive	
forgiven	
reward	
place	
praise	
remember	
remembered	
think	
teach	
taught	
win	
target	
hit	
lend	
lent	
ascend	
ascended	
expand	
conceal	
force	
deny	
denied	
smile	
fail	
received	
discharge	
treat	
behave	
inform	
interpret	
manage	
direct	
quote	
lead	
led	
guide	
fire	
use	

C) Opposites of nouns

adjective	opposite
joy	
denial	
death	
survival	
earth	
liberty	
debtor	
height	
high	
wisdom	
dawn	
dusk	
noise	
pleasure	
surplus	
failure	
order	
saint	
entrance	
complaint	
accused	
war	
excess	
poverty	
danger	
truth	
master	
leopard	
confusion	
clean	
cleanliness	
monogamy	
prose	
advantage	
loose	
loosen	
ancestry	
pedestrian	
rural	
town	
entrants	
prince	
princess	
queen	
heifer	
widow	
gander	
drake	

N.B

Mixed exercise on opposites must be prepared in sentences and re-write form and given to the learners to perfect their understanding.

TOPIC: ADJECTIVES

- An adjective is a word that is used to describe a noun or pronoun.
- An adjective is a word that qualifies or adds meaning to a noun or pronoun.

Types of adjectives

1. Size:

fat, big, huge, tall, giant, elegant, small, thin, slender, tiny, minute, short, thick.

2. Shape

circular, round, oval, rectangular, triangular, square, spherical, cylindrical.

3. quality (opinion)

good, nice, strong, weak, bad, beautiful, smart, clean, tidy, untidy, dirty, shabby, ugly.

4. quantity (number)

few, plenty, little, many, a lot, abundant, much

5. colour

red, blue, green, pink, yellow, purple, maroon, grey, brown, navy blue

6. material

These are normally formed from nouns.

An example is wooden e.g. wooden box

7. Particulars

These are adjectives which sound like verbs but in actual sense only performing the work of describing or telling us more about nouns.

They are in two forms

i) present participle

Examples

- a) I read an interesting history book last night.
- b) We had an exciting trip to Dares-salaam.

- c) Comedians do amusing things.
- i) Past participles
- a) Her shoes were well polished.
- b) It is good to drink boiled water.
- c) A prisoner who is already satisfied can want more food.

8. Age

young, old, new, modern, ancient.

9. Nationality / origin (proper adjectives)

This type of adjectives shows the people who live in a particular country and perhaps the language they speak.

They are proper adjectives because they are derived from proper nouns.

i) Adjectives ending (an)

Country (proper noun)	Adjective
America	American
Australia	Australian
Belgium	Belgian
India	Indian
Hungary	.....
Cameroon	.....
Uganda	.....
Kenya	.....
Tanzania	.....
Norway	.....
Russia	

ii) Adjectives ending in (ese)

Country (proper noun)	Adjective
China	Chinese

Japan	Japanese
Portugal	.....
Vietnam	.....
Burma	Burmese
Togo	.....
Sudan	.....
Rwanda	Rwandese / Rwandan
Congo	.....

iii) Adjectives that end in (i)

Country (proper noun)	Adjective
Iraq	Iraqi
Israel	Israeli
Pakistan	.....
Kuwait	.....
Somalia	.....

iv) Adjectives that end in (sh)

Country (proper noun)	Adjective
Britain	
England	
Denmark	
Finland	
Scotland	

Spain	Spanish (language)
	Spaniards (people)
Sweden	Swedish (Swedes – people)
Wale	Welsh
Turkey	Turkish (Turks – people)
Ireland	Irish

v) Adjectives that end in –ch-
Country (proper noun)

Adjective

Czechoslovakia	Czech (Czechs – people)
France	French
Holland / Netherlands	Dutch

vi) Other adjectives of nationality that change differently.

Country (proper noun)

Adjective

Greece	Greek (Greeks - people)
Switzerland	Swiss
Thailand	Thai
Burkina Faso	Burkinabe

N.B

An activity about forming proper adjectives from proper nouns.

Ref: core English Grammar

Comparison in Adjectives.

Comparison in adjectives refers to the use of states / parts/ degrees of an adjective, namely.

The positive, the comparative, the superlative.

1. To adjectives that end in “e”, letter “r” is added for the comparative and “st” for the superlative.

positive	comparative	Superlative
fine		
wise		
gentle		
humble		
rare		
large		

2. By adding ‘er’ for the comparative and “est” for the superlative that end in different ways.

positive	comparative	Superlative
long		
short		
tall		
clever		
sick		
quick		
fast		
grey		
narrow		
stupid		
black		
brown		
blue		
		

3. By adding 'er' for the comparative and "est" for the superlative with the last letter of the positive adjective doubling.

Positive	Comparative	Superlative
hot		
fat		
wet		
big		
sad		
mad		
red		
thin		
		

4. To form the comparative and superlative of adjectives that end in y and are preceded by a consonant, drop y and replace it with "ier" and "iest" respectively.

Positive	Comparative	Superlative
happy	happier	happiest
early		
crazy		
lucky		
pretty		
tiny		
noisy		
ugly		
funny		
bonny		
easy		
muddy		
bumpy		
silky		
		

5. Long adjectives (adjective with more than three syllables) take more for comparative and most for the superlative.

Positive	Comparative	Superlative
active	more active	most active
beautiful		
handsome		
generous		
faithful		
merciful		
quarrelsome		
gracious		
dangerous		
marvelous		
sensible		
		

6. The following adjectives have irregular forms in comparative and superlative , i.e. they are formed differently.

Positive	Comparative	Superlative
good	.....	.....
bad	worse	worst
ill	worse	worst
many	more	most
much	more	most
little	.....	.....
.....	farther (distance)	farthest
fur	further	furthest
near	.....	.....
.....	later	later
late	latter	last
.....	older	oldest
old	elder	eldest (relation)

Activity

Write the following adjectives in comparative and superlative forms

Positive	Comparative	Superlative
safe		
pure		
simple		
rude		

Sentence patterns with comparatives

Activity

Complete these sentences by inserting the correct comparatives of the adjective in brackets.

1. Mr. Male's condition is than it was. (bad)
2. Of the twins, Sarah is the (ugly)
3. She wrote a composition than mine. (good)
4. Teddy was the of the twin sisters. (thin)
5. A crested crane is than a pocket. (graceful)
6. The bursar gave me money than I expected. (little)
7. The chief guest arrived than expected. (early)
8. Mary is the of the two girls. (beautiful)
9. The you go, the cooler it becomes. (far)
10. Dr. Latigo is than any doctor in Uganda. (knowledge)

The use of comparatives in both clauses in a sentence.

e.g.

1. As you go high, it becomes cool.
The higher you go, the cooler it becomes.
2. As he spent much of his money on alcohol, he became poorer.
The more money he spent on alcohol, the poorer he became.

Activity:

Re-write the sentences below as instructed.

1. As you grow old, you become wise. (Begin: The older)

2. He became richer because he worked harder. (Begin: The harder)

3. She became fatter as she ate more food. (Begin: The more)

4. His money decreased as he produced many children. (Use less)

5. The Mathematics number became simpler to solve. (Begin: The more)

-
6. My sister became thinner as she ate less food. (Use ... less)
-
7. We became more tired as we went further. (The further)
-
8. The candidates became cleverer as they did more research. (end they became.)
-

Sentence patterns with the superlative.

Examples

1. Nassuna is the tallest girl in our class.
2. The thinnest girl in primary six sits in the front row.

Activity:

Complete these sentences by inserting the correct superlatives of the adjectives in brackets.

1. December is the month of the year. (later)
2. My brother has flown to London. (old)
3. Matilda is the woman in our village. (quarrelsome)
4. Amooti is the of all comedians in Uganda. (funny)
5. Apolot has the handwriting in the class. (good)
6. Okot has the ruler in our class. (long)
7. I borrowed the book in the library. (interesting)
8. Nantale is the of the triplets. (funny)
9. She is the of the quadruplets. (thin)

The use of as...as / not as ...as, not so as

We use as ...as when comparing people , things or situations with the same / similar characteristics or of a similar nature; and not having the same characteristics.

Examples;

1. My shirt is clean. Your shirt is clean.
My shirt is as clean as yours.
2. Peter weighs 50kg. Taddeo weighs 50kg.
Peter is as heavy as Taddeo.
3. Mr. Kafeero is not rich. Mr. Kapere is rich.
Mr. Kafeero is not so rich as Mr. Kapere.

Activity: 1

Re-write the sentences using as....as / notas / not soas

1. An elephant is a huge animal. A hippo is a huge animal.

2. A dictionary is a thick book. A Bible is a thick book.

3. A puppy is fatter than a kitten.

4. My shirt is dirty. Your shirt is not dirty.

5. Okong is two feet tall. Opata is two feet tall.

6. A television is important. A radio is equally important.

7. Our teacher teaches English very well. She also speaks French very well.

Activity: 2

Re-write the following sentences as instructed.

1. Kato is very bright. Wasswa is very bright. (Use as as)

2. Katongole is not as wealthier as Katuntu. (Use than....)

-
3. There is no man in our village who is shorter than Mukulu. (Use ... shorter..)
-
4. I picked a mango which was riper than the rest in the basket. (Use ripest....)
-
5. A bag of cement weighs 50kg. A bag of rice weighs 5kg. (use as)
-
6. You are tired. I am very tired. (Begin: I am more)
-
7. A weaverbird is a very noisy bird compared to all the other birds.
(Begin: A weaverbird is the)
-
-

Use more than, prefer, equally

Examples

1. Tom is taller than Peter.
2. Moses likes rice more than millet.
Moses prefers rice to millet.
Moses and Tom are equally tall.

Activity:

Use more than, prefer or equally to complete the sentences

1. Daniel is taller Jesciah.
2. Suzan and James are short.

3. Sarah and I are bright.
4. Moses is shorter Betty.
5. Most children sweets to buns.

Re-write the sentences as instructed

6. Sarah is 5 feet tall. Andrew is 5 feet tall. (Use equal)

7. Jack weighs 38 kg. Andy weighs 50kg. (Use than.....)

8. Moses is dull. Peter is equally dull. (Use as.... as....)

9. My father liked matooke more than posho. (use prefer)

10. She prefers beef to chicken. (Use like)

Formation of adjectives

Common endings when forming adjectives

- a) - Y e.g. rain becomes rainy.
- b) - en e.g. gold becomes golden.
- c) - full e.g. cup becomes cupful.
- d) - less e.g. money becomes moneyless.
- e) - ible e.g. terror becomes terrible
- f) some endings like - ible , - ive, ar, have to be used after dropping some final letter (s) of the noun
e.g
- g)
 - expense drops e and becomes expensive.
 - rectangle drops e and becomes rectangular
 - unity drops y and becomes united
- h) – sh e.g. woman becomes womanish.
- i) - able e.g. cure becomes curable.
- j) - ous e.g. danger becomes dangerous.

Making adjectives from nouns “**sh**”

Noun	Adjective
child	childish

woman	womanish
fool	.....
girl	.....
boy	boyish

Making adjectives out of nouns by adding "y"

Noun	Adjective
rain	
cloud	
wind	
dirt	
dust	
milk	
water	
sand	
stone	
blood	
fun	
salt	

Making adjectives from nouns by using "able"

Noun	Adjective
eat	
break	
enjoy	
comfort	

suit	.....
knowledge	.....
digest	.....
value	.....
charity	.....
fashion	.....
misery	.....
service	.....

Making adjectives out of nouns by using “less” at the end of the noun.

Noun	Adjective
use	useless
care	
job	
end	
money	
child	
hope	
harm	
help	

Making adjectives from nouns by using “ful” and replacing “y” with “i”

Noun	Adjective
use	
hope	
harm	

forget	.....
mercy	.....
skill	.....

Making adjectives out of nouns by adding “ous”

Noun	Adjective
-------------	------------------

danger

religion

ambition

zeal

advantage

adventure

anxiety

space

caution

courage

grief

poison

Forming adjectives out of verbs

- By adding - ing at the end of the word.
- By adding - ed

Noun	Adjective
-------------	------------------

unite	united
-------	--------

tire	tired
------	-------

excite	exciting
please	pleasing
love	loving
amuse	amusing
polish	polished
worry	worried
satisfy	satisfied
interest	interesting
surprise	surprising

Activity:

Complete the sentences using the words given in the brackets.

1. The Constitutional Square is situated in a position. (centre)
2. The president's office has the most seats. (luxury)
3. Primary five is a class. (noise)
4. He feels quite after taking milk. (energy)
5. The death of her mother created a situation for her. (terror)
6. A ball is a object. (circle)

S.ST

VOCABULARY

Ethnic group, Tribe, Clan, Migrations, Ancestors

1. Give the meaning of;
 - a) **Ethnic group:** This is a group of people who share the same origin and speak related languages.
 - b) **Tribes:** This is a group of people who share the same ancestors.
 - c) **Clans:** This is a group of people who share the same totem.
 - d) **Migration:** This is the movement of people from one place to another for settlement.
 - e) **Culture:** The accepted way of behavior in society.
 - f) **Customs:** The accepted practices of society.
 - g) **Totem:** The object that is respected as symbol in a clan.

The people of Africa are grouped under ethnic groups.

These include the following:

-Bantu	Others:
-Cushites	-The British
-Caucasians	-The Pygmies
-Semites	-The Asians
-Berber	-The Negroes
-Nilotes	-The Khoisans

THE BANTU:

-This is the largest ethnic group in Africa.

-The Bantu are in four groups namely;

a)Eastern Bantu c)Central Bantu

b)Western Bantu d)Southern Bantu

Western Bantu:

They moved from Cameroon highlands and settled in East Africa at around 100AD through the Western direction.

Examples of Western Bantu:

-Banyoro	-Banyankole	-Bagisu, etc.
-Baganda	-Basoga	- Batooro
- Bagwere	- Bakiga	- Basamia

The Eastern Bantu:

-They moved from Cameroon highlands and settled in Zambia.

-Then they split into two groups.

-One group moved northwards to Tanzania and Kenya.

-Another group moved southwards and formed the Southern Bantu.

Examples of Eastern Bantu:

-Akamba	-Nyamwezi
- Kikuyu	-Taita

Examples of Southern Bantu:

- Herero, Ovambo and Griqura in Namibia.
 - Tswana in Botswana.
 - The Shona in Zimbabwe
 - The Sotho: These settled in S.Africa along R.Vaal and Orange.
 - The Ngoni: They split and formed tribes like Zulu, xhosa, Ndebele,Venda and swazi who are in South Africa
- NB.The Southern Bantu have click sounds in their language which they borrowed from Khoisan.

Central Bantu:

They are settled in Congo and Democratic Republic of Congo.

Examples of Central Bantu:

- Bemba, Lozi of Zambia.
- Bakongo, Balunda and Baluba of Congo.
- Yao, Makwa of Mozambique.
- Nyanja, Chewa of Malawi.
- Mbundu, Ovimbundu of Angola.

Problems faced by the Bantu during their migration:

- i)Attacks from dangerous wild animals.
- ii)Attacks from hostile tribes.
- iii)Harsh weather conditions.
- iv)Shortage of food.
- v)Poor transport
- vi)Rough terrain
- vii)Loss of lives and property.

Reasons for Bantu's migration:

- i)Desire for adventure.
- ii)Due to outbreak of diseases in Cameroon highlands.
- iii)They were looking for areas with fertile soils for farming.
- iv)They wanted areas with reliable rainfall.
- v)Due to internal and external conflicts in their homeland.
- vi)Due to population increase in Cameroon highlands

1.Historical factors that influenced the Bantu's migration.

- i.Outbreak of diseases.
- ii.Internal and external conflicts.

iii.Drought in their cradle land.

3.Effects of Bantu's migration:

- i).They introduced / introduction of new culture.
- ii).New crops were introduced.
- iii).Population increase in areas of settlement.
- iv).New skills were introduced.
- v).Intermarriages leading to new cultures.
- vi).Some Bantu formed kingdoms

Interlacustine region:

The area between the great lakes of East Africa.

Kingdoms that were found in the interlacustine region:

- Buganda kingdom -Wanga kingdom
- Ankole kingdom -Toro kingdom
- Karagwe kingdom -Bunyoro kingdom.

Great lakes of East Africa:

- L. Victoria -L.Kyoga
- L. Tanganyika -L.Edward
- L. Albetr -L.George
- L. Malawi

Reasons why Bantu settled where they are living today.

- Presence of fertile soils for farming.
- Presence of good climate.
- Areas were free from epidemic diseases.

Problems were faced by Bantu during their settlement.

- They faced a problem of hostile tribes.
- Harsh weather.
- Diseases.
- Attacks from wild anima

People who formed Wanga kingdom.

Abaluhya

Causes of migration today:

- To look for better jobs.

- To Look for better social services.
- To look for fertile areas for farming.
- To look for areas with good climate.
- To look for better security

THE NILOTES:

The Nilotes are divided into three groups namely;

River- Lake Nilotes are believed to have migrated from Bahr el Ghazel in Sudan.

Plain Nilotes are believed to have migrated from Ethiopian highlands.

Highland Nilotes are believed to have migrated from Ethiopian highlands.

The main occupation of the Nilotics was pastoralism.

The River –Lake Nilotes first settled at Pubungu when they came to Uganda.

Examples of River- lake Nilotes

- | | |
|--------------------|----------------------|
| -Acholi of Uganda. | -Japadhola of Uganda |
| -Alur of Uganda | - Jaluo of Kenya |

Examples of the Plain Nilotes (Nilo- Hamites)

- | | |
|------------------------|------------------------------|
| -Karimajongs in Uganda | -Turkana of Kenya |
| -Dodoth of Uganda | -Iteso in Uganda |
| -Kumam of Uganda | -Masai of Kenya and Tanzania |
| -Pokot of Kenya | |

Examples of the Highland Nilotes

- | | |
|--------------------|--------------------|
| -Sabiny of Uganda | -Kalengin of Kenya |
| -Kipsigis of Kenya | -Nandi of Kenya |

What made the Nilotes to migrate from their cradle land?

- Due to the outbreak of diseases.
- Due to prolonged drought in Bahr-el-Ghazal.
- Due to internal conflicts.
- Overpopulation in their cradle land.
- Drought and famine.

Questions

1. Give two reasons why most Nilotes have changed from pastoralism (cattle keeping) to crop farming? _____

2. Write four pastoral tribes in East Africa.

3. Write the pastoral tribes in Africa outside East Africa.

4. Mention the problems faced by pastoral tribes.

5. Write two disadvantages of nomadic pastoralism.

6. Suggest ways in which nomadic pastoralists can be helped to live a better life.

THE CUSHITES

-The Cushites migrated from Arabia and settled in the Horn of Africa.

-They moved southwards into East Africa.

--They were the first people to move and settle in East Africa.

Questions

1. Name the countries that form the Horn of Africa

-Somalia

-Djibuti

-Eritrea

-Ethiopia

2.What was the economic activity of the cushites?

Pastoralism

Examples of Cushitic groups

- Somali
- Boran
- Bahima
- Ttutsi
- Oromo
- Ogaden

The Semites

- The Semitic group has a mixture of Arabic and Jewish blood.
- The Semites came as a result of intermarriages between the Arabs ad the Jews.
- The Semites live in Northern Africa and in the Middle East.

Tribes under Semites

- The Amhara
- Bagara
- Tigreans of Ethiopia
- The Eritrea of Eritrea
- The Nubians of Sudan and Uganda
- The Arabs of Sudan.

NB:

The Semites are pastoralists.

The Khoisans

- The Khoisans are the earliest inhabitants of Southern Africa.
- They comprise of the Khoi Khoi and the Sans.
- The Khoisan speak a language with click sound.
- They are pastoralists and hunters.
- They were displaced by Bantu and Europeans from their homelands.
- Today they live in Kalahari and Namib deserts.

The pygmies

- They lived in the tropical rainforests of Democratic Republic of Congo.
- They are short and dark skinned with broad nose.

- They are about 137cm tall.
- They are hunters and fruit gatherers.

The Negroes

- The Negroes are considered to be Bantu.
- Their origin is from the forests of West Africa.
- They are mainly crop farmers.

Examples of Negroes in Africa are;

- Mandika / Mande of Mali
- The Asante of Ghana
- The Yoruba and Igbo of Nigeria

NB

Most Negroes were taken as slaves to America.

Guiding Question

How were the people of Africa organized during the pre-colonial time?

- Africans were organized under kingdoms.
- Under clan systems.
- Under chiefdoms
- Under empires

Kingdoms of Africa

Eastern	Western	Southern	Central
Buganda kingdom	Ghana kingdom	Zulu	Great Zimbabwe
Toro kingdom	Songhai		Luba – Lunda

Bunyoro kingdom	Benin		Mwenomutapa
Ankole kingdom	Kanem Bonu		
Wanga kingdom	Mali		
Karagwe kingdom	Asante		
Rwanda Kingdom			
Burundi kingdom			

Complete the map below showing kingdoms of Africa by shading major kingdoms



1. How were Africans economically organized in pre-colonial time?

Africans were engaged in many traditional activities such as;

- i. Trade
- ii. Farming
- iii. hunting
- iv. Keeping animals
- v. Iron working and painting

2.What is a kingdom?

A state ruled by a king.

Why were kingdoms restored in Uganda?

- i).To promote and preserve culture among the people of Uganda.
- ii).To promote peace and unity in Uganda.

iii).To unite people for national development.

4.Which constitution abolished kingdoms in Uganda?

The 1967 constitution.

5.Which kingdoms were restored in Uganda by the 1995 constitution?

- i.Buganda Kingdom.
- ii.Toro kingdom
- iii.Bunyoro Kingdom
- iv.Busoga kingdom

6.Give the importance of kingdoms

- i.They promote culture.
- ii.They promote unity.
- iii.They promote morals.
- iv.They promote peace.
- v. They unite people for national development.

7. Write down two characteristics of a kingdom

- i).They have royal regalias.
- ii).They have hereditary leadership.
- iii).Their kings are the fountain of honor.

8. Mention the factors that led to the expansion of Buganda kingdom.

- i).Buganda had a strong leadership.
 - ii).Buganda had enough food.
 - iii).Buganda had a good location of being near L. Victoria.
 - iv).Buganda had acquired guns during the long distance trade.
- Buganda had good climate.

9.What caused the decline of Bunyoro-Kitara empire

- i). The large size of the empire which was hard to manage.
- ii). The out break of epidemic diseases which led to the death of their beloved cow Bihogo.
- iii). The coming of the Luo-Babito.
- iv). Internal conflicts from the Princes which resulted into the creation of Tooro and Bunyoro kingdoms.

10. What were the contributions of Bunyoro-Kitara empire to modern economy?

- i). They introduced coffee cultivation.
- ii). They introduced iron smelting.
- iii). They introduced long horned cattle.

Social contributions

- i. They introduced bark cloth making.
- ii). They introduced local chess.
- iii). They introduced wooden sandals.
- iv). They introduced centralized system of government.
- v). They introduced Pet names.

Who were the founders of Bunyoro-Kitara empire?

Abatembuzi

Who was the first and last ruler of the Chwezi?

- The first was Ndahura.
- The last was Wamala.

What caused the rise of Ghana kingdom?

- Ghana had a lot of gold.
- Ghana had a lot of food.
- Ghana had strong weapons made of iron.

What caused the fall of Ghana kingdom?

- Due to external attacks.
- The loss of gold.

FOREIGN INFLUENCE OF THE EUROPEANS IN AFRICA

1. Who were the first Europeans to come to the Coast of South Africa?

The Portuguese

2. Who named cape of storms the cape of Good hope?

3. Who was the leader of the Dutch that settled at Cape Province in South Africa?

Sr. Jan Van Riebeck

4. Name the first trading company to come to East Africa.

The Dutch East India Company led by Sir Jan Van Riebeck

5.Name the first area in Africa to be colonized Cape province in South Africa

6.Who were the Boers in South Africa?

These were the Dutch farmers.

7.Which Europeans displaced the Dutch from Cape colony?

The British

The Great Trek

This was the journey of the Boers from Cape Colony North-East wards across R.Vaal.

What caused the Great Trek?

- i).The Dutch were stopped from carrying out slave trade.
- ii).The introduction of English as the official language.
- iii).The British imposed harsh rule to the Dutch.

What problems were faced by the Dutch (Boers) during the Great Trek?

- i).Shortage of food.
- ii).Poor transport.
- iii).Disease outbreak
- iv) Harsh climate.
- v)They fought wars with the people they met around R.Vaal. (Shaka Zulu)

Results of Great Trek

- i. New states such as orange free state, Transvaal state and Natal province were formed.
- ii. Gold was discovered.
- iii. There was loss of lives during the battles.
- iv. It led to the discovery of diamond and gold.
- v. New crops were introduced eg maize.
- vi. Much land of Africans was taken by the Boers.

The Asians in Africa

- The Asian included the Indians, Malaysians, Arabs and Chinese.
- The Asians came to Africa as traders and settlers.

-Other groups of Asians came as workers on the railway line.

How did the Asians contributed to the development of African?

- i).They constructed Kenya-Uganda railway.
- ii).They built shops.
- iii).They built industries.
- iv).They introduced new crops.
- v).They introduced new forms of money e.g the Indian rupees.
- vi).They started plantation farming.

The Arabs in Africa

-Most people in North Africa are Arabs.

-The Arabs came to Africa to;

- i).spread Islam.
- ii).trade.
- iii).settle as refugees.

-Arabs came from Saudi Arabia.

Questions

Give three contributions of the Asians to E. Africa

- i).They built shops.
- ii).They built industries.
- iii).They constructed Kenya – Uganda railway.

2.Give three reasons for building the Kenya- Uganda railway

- i).To transport goods from Uganda to the coast.
- ii).To transport British administrators from the coast to the interior.
- ii)i.To stop slave trade.
- iv).To promote Legitimate trade.

3.What problems were faced by the builders of Kenya-Uganda railway?

- i).Attacks from hostile tribes.
- ii).Attacks from dangerous wild animals.
- iii).Epidemic diseases.
- iv).Crossing the rift valley was difficult.

4.Why were Indian coolies invited to construct the Kenya-Uganda railway?

- i The Africans never wanted to leave their families.

ii The Indian coolies were more experienced in the railway construction than the Africans.

5.What were the results of constructing Kenya-Uganda railway?

- i).Slave trade was stopped.
- ii).Transport was made easy.
- iii).It led to the development of towns.
- iv).Trade was promoted.

6.How did the following affect the construction of Kenya-Uganda railway?

a)Rift valley

-It was difficult and expensive to construct the railway across rift valleys.

b)The Nandi people

- They never wanted the railway to go through their land.
- They killed some builders of the railway line.

c)Lions of Tsavo

They killed the builders of the railway line.

7.What role was played by each of the following people during the construction of the Kenya-Uganda railway.

i).Engineer George White House

He was the chief engineer during the construction of the railway.

ii).Major MacDonald

He was the chief surveyor during the construction of the railway.

iii).Colonel Patterson

He killed the man eaters of Tsavo.

iv).Sir William Mackinnon

He brought the ideas of the construction of the Uganda railway.

v).Sir Guild Ford

He was the last engineer to inspect the Uganda railway.

FOREIGN INFLUENCE ON THE AFRICAN CONTINENT

Foreign influence

There were the changes that were brought to Africa by foreigners from Europe and Asia.

Question

How did the foreigners influence the people of Africa?

- Some people in Africa became Christians.
- Some people in Africa became Moslems.
- Africans learnt how to read and write.
- Africans learnt practical skills
- Africans started growing cash crops.
- Africans got modern weapons for defense and protection.
- Africans started speaking foreign languages.

For many years, Africa was referred to as a dark continent by Europeans because they did not have information about its interior.

Reasons why Africa took long to be known to the outside world

- Africa had thick impenetrable forests that made transport difficult.
- It was due to hostile tribes.
- Africa had hot deserts.
- Africa has dangerous wild animals.

NB:

The above problems were feared by the foreigners.

Foreign groups / groups of foreigners that came to Africa

- They were grouped as Arabs and Europeans
- The following were some of the foreigners under European;
 - i)Explorers
 - ii)Missionaries
 - iii)Traders
 - iv)Colonialists / Administrators
 - v)Settlers

NB: The Arab traders were the first foreigners to come to Africa.

Reasons why foreigners came to Africa

- 1.They came to spread religions.
- 2.They came to get materials for their industries.
- 3.They wanted to get market for their finished goods.
- 4.They wanted to invest their surplus capital.
- 5.They wanted to find new lands for settlement.
- 6.They wanted to stop slave trade.

The coming of the Arabs (to the African continent)

- Arabs came from Saudi Arabia and some from Persia.

- They came by means of special boats called dhows which were powered by the monsoon winds.
- They came mainly to trade.
- They also wanted to spread Islam.
- They were running away from religious conflict.

Effects of the coming of the Arabs

- 1.They introduced the Islamic faith.
- 2.They promoted trade.
- 3.They introduced the new ideas of architecture.
- 4.They introduced some crops e.g cloves, rice, sisal.
- 5.They introduced Zebu cows.
- 6.They introduced new styles of dressing.
- 7.Their coming led to the growth and development of coastal towns of East Africa.
- 8.Slave trade was introduced in Africa.
- 9.They introduced many items like guns, beads.

SLAVE TRADE

What is Slave Trade?

The buying and selling of human beings.

What was slavery?

This was the possession of a person by another people illegally.

How were slaves obtained?

- i).Through raids.
- ii).Through barter trade.
- iii).Fuelling was between chiefdoms and kingdoms or getting war captives.

Why were slaves needed?

- i).The Arabs wanted slaves as domestic workers.
- ii).The French wanted slaves to work in their sugarcane plantations in the Indian ocean.
- iii).The other Europeans wanted slaves to work for them in their mines and sugarcane plantations in America.
- iv).The African leaders needed them for bartering.

People who took part (participated) in slave trade

- a)The Arab traders.
- b)The African chiefs and kings
- c)The Khartoumers.
- d)The Europeans (the Dutch, the French, Spaniard, Portuguese)

Slave trade markets in East Africa

- Zanzibar was the largest slave trade market in the world.
- Tabora (Kaze) was the largest slave trade market in the interior.

EFFECTS OF SLAVE TRADE

- Kings and chiefs gained a lot of wealth.
- It led to the growth of some kingdoms and societies.
- It led to the growth of towns e.g Mombasa, Malindi, Kilwa, Sofala, etc.
- Africa's interior was known to the outside world.
- It led to the introduction of new items of trade e.g guns, beads, plates, cups, etc

Negative effects

- Loss of lives
- Human suffering
- Loss of culture
- Famine
- Depopulation
- Tribal conflicts emerged
- Destruction of property

Reasons why slave trade was difficult to stop

- It was profitable to the traders and to the African chiefs.
- Many Europeans wanted it to continue so that they could get cheap labour.

People who participated in abolition of slave trade

- Sir Samuel Baker
- Dr. David Livingstone
- Abraham Lincoln
- William Wilberforce
- Adam Smith

Questions

1.a)Mention the treaties that were signed to stop slave trade in East Africa

- Moresby treaty – 1871
- Harmattan treaty – 1876
- Frere treaty – 1878

b)Who signed each treaty above?

- Capt Moresby and Sultan of Zanzibar signed the Moresby treaty.
- Harmattan and the Sultan of Zanzibar signed the Harmattan treaty.

-Frere treaty was signed by Sultan of Zanzibar and Frere.

2.How did the following help to end slave trade?

a)Dr. David Livingstone

He invited trading companies to carryout legitimate trade.

b)The railway line

It was used to transport goods instead of using slaves.

c)William Wilberforce

He decampaigned slave trade in the British parliament.

d)The missionaries

They preached against slave trade.

3.Write down three tribes in Uganda under the Sudanic group of people.

-Lugbara

-Madi

-Kakwa

1.a)What was Trans-Saharan trade?

This was the trade between the Berbers and the people of West Africa across Sahara desert.

b)Name the goods that the Berbers brought to West Africa.

- | | |
|--------------------|-------------|
| i)salt | iv)glasses |
| ii)silk | v)camels |
| iii)Cotton clothes | vi)perfumes |

c)Name the items of trade which the Berbers got from West Africa during the Trans-Saharan trade

- i)Ivory
- ii)Gold
- iii)Skins and hides
- iv)Ostrich feathers

2.Why did the trades move in Caravans during the Trans-Saharan trade?

For protection

3.What makes a camel an ideal means of transport in the desert?

- It has strong lids to protect the eyes from sand dust.
- It has a fatty hump that gives energy.
- It has flat homes that cannot sink in sand.

4.a) **What was Trans Atlantic trade?**

This was the trade that involved the people of West Africa, America and Europe across Atlantic ocean.

b) Mention the items of trade that were got from Europe to Africa

- clothes
- guns
- cups and plates

c) From Africa to America

- Slaves
- Ivory
- Gold

d) From America to Europe

- | | | |
|-----------|---|--------|
| - Sugar | - | gold |
| - silver | - | cotton |
| - Tobacco | - | Tea |
| - Copper | | |

MATHEMATICS TESTS PRIMARY SEVEN

Test one

1. Work out: $10 \div 2$

2. Simplify: $2x + 3x$.

3. Write in figures: Sixty one thousand.

4. Given set $A = \{a, b, f, k\}$ and Set $B = \{a, c, k\}$, find $n\{a \cup B\}$

5. Simplify: $^{-}5 + ^{-}2$.

6. Write 49 in Roman numerals.

7. Shade $\frac{1}{2}$ of the drawing below.



8. Using a pair of compasses, a ruler and a pencil only, bisect the line below.



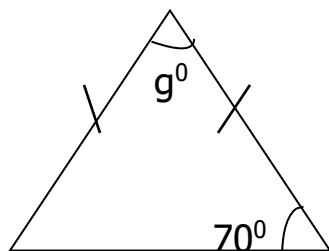
9. What is the value of 5 in the figure 65011?

10. Change 2.5 metres into centimeters.

11. Cards labeled 1 to 5 are folded, put in a bucket and mixed up.
What is the probability of picking a card having a prime number?

12. Seven children had the following ages: 7, 3, 2, 5, 1 and 4. Find the mean age.

13. In the triangle below, find the size of angle g in degrees.



14. Work out: 1 6 5

$$\begin{array}{r} \times \quad 4 \\ \hline \end{array}$$

15. Given that $a = -3$ and $b = 4$. Find the value of $2a + 2b$.

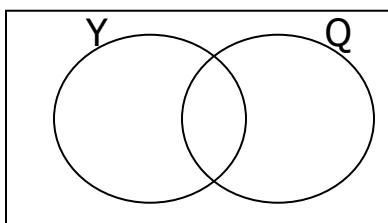
16. Find the next number in the sequence: 23, 19, 16, 14, _____

17. A fifty minutes test started at 9.50 a.m. What time did it end?

18. Solve: $4p - 4 = 20$.

19. in a line of vehicles, a bus was the 7th from each end of the line. How many vehicles were in the line?

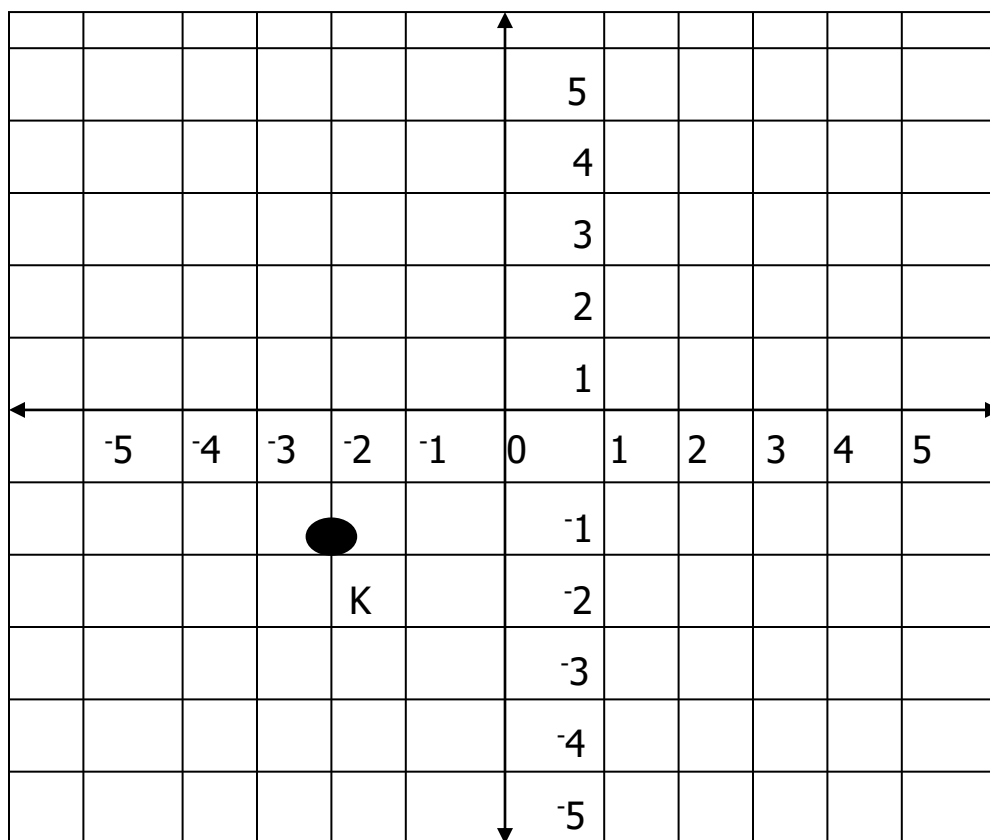
20. In the Venn diagram below, shade the area $(Y \cup Q)$.



21. Work out: $\frac{15}{12} \div \frac{5}{9}$

22. Change 11_{ten} to base two.

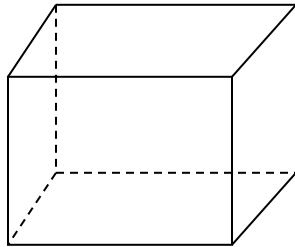
23. In the graph below, find the co-ordinates of point K.



24. A boy ran a distance of 6km in 45 minutes. What was his speed in kilometers per hour?

25. Arrange the following decimals in order beginning with the smallest:
0.11 0.5 and 0.03

26. How many edges does the figure below have?

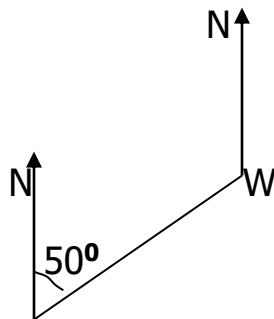


27. Work out: 6702

28. Four packets of mango juice cost shs12,000. What is the cost of seven similar packets?

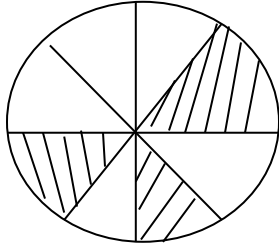
29. In a P7 class, $\frac{2}{5}$ of the pupils are girls. If there are 150 pupils in the class, find the number of boys.

30. In the figure below, find the bearing of town Z from town W.

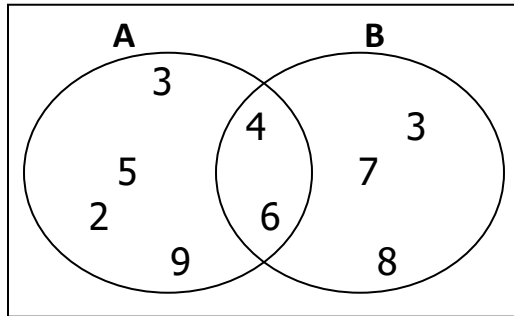


1. work out:
$$\begin{array}{r} 1\ 3 \\ +\ 4\ 3 \\ \hline \end{array}$$

2. What fraction of the circle is shaded?



3. In Venn diagram below, find $n(A \cap B)$

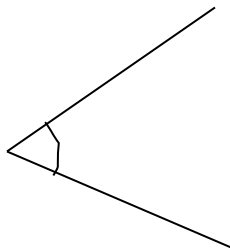


4. Write 24 in roman numerals

5. Simplify: $6y + 4y - 5y$

6. Write in figures: Forty two thousand eight.

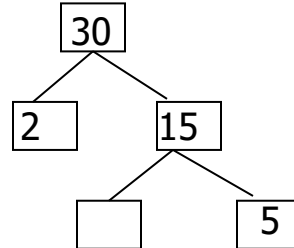
7. Using a protractor, measure the angle below.



8. Round off 9.46 to the nearest tenth.

9. Work out: $\frac{4}{7} \div \frac{8}{21}$

10. Fill in the missing numbers in the factor tree below.



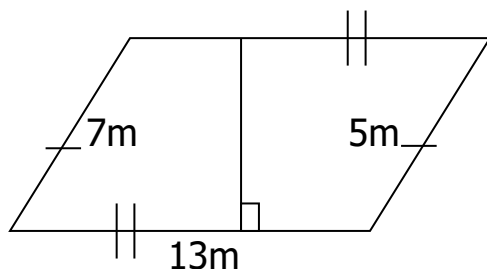
11. Change $3\frac{1}{2}$ into grams.

12. Work out: $\begin{array}{r} 200 \\ -112 \\ \hline \end{array}$

13.

14. A primary seven pupil got the following marks in daily mental work exercise for a week; 7, 6, 6, 7, 2, 6, 8. What was the pupil's modal mark?
15. Arrange the following fractions in order beginning with the biggest, $\frac{1}{4}$, $\frac{2}{5}$ and $\frac{3}{5}$.
16. Given that set $M = (1, 2, 4)$, how many subsets has set M ?
17. Work out: $+7 - -4$
18. Work out: $2\frac{1}{2} - \frac{1}{4}$
19. David got a loan of shs500,000 from the bank at a simple interest rate of 20% per annum. What was the interest on the loan after a period of 9 months?

20. Find the area of the figure below.

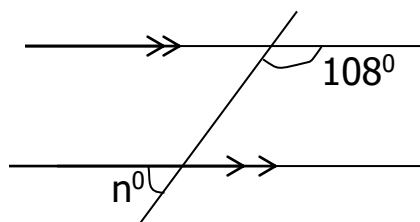


21. Primary seven pupils will have a party next week. Find the probability that the party will take place on a day that starts with letter "T".

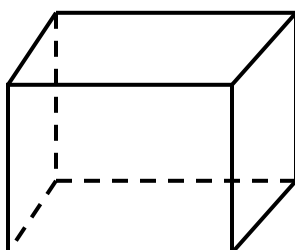
22. The cost of 5 bars of soap is shs5,400. Find the cost of 3 similar bars of soap.

23. Write the next number in the sequence : 1, 4, 9, 16

24. In the figure below, find the value of n in degrees.

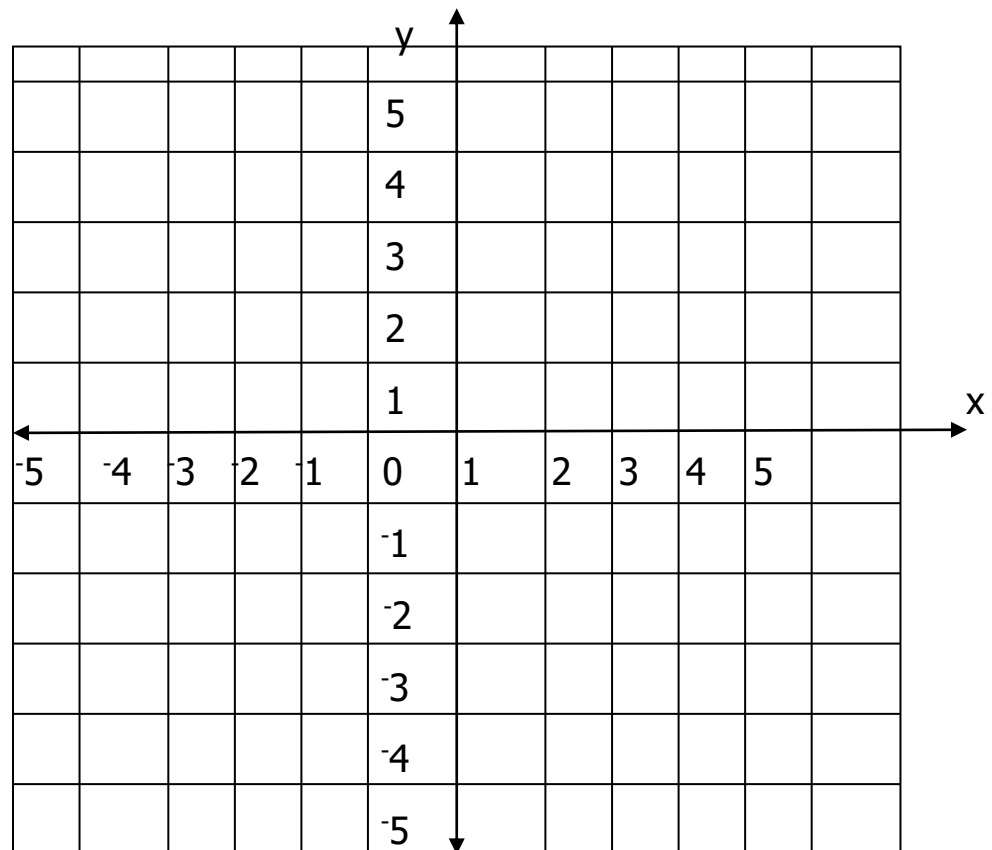


25. How many vertices does the figure below have?



26. A mathematics test was given to a class of 50 pupils and 45 of them passed the test. What percentage of the pupils failed the test?

27. On the graph below, mark point M(-1, 4)



28. Solve: $3x - 2(x + 3) = 9$

29. Solve for x: $3 + 4 = x$ (finite5).

30. A fisherman saw a boat on water on a bearing of 060° . What was the bearing of the fisherman from the boat?

Test three

1. Work out: $60 \div 6$

2. Given that set $K = \{1, 2, 3, 4, 5\}$ and set $L = \{0, 5, 7\}$, find $(K \cap L)$.

3. Simplify: $4k - 3k + k$

4. A meeting started at 9:30am and lasted for 50 minutes. At what time did it end?
5. Express 0.3 as a fraction.
6. Arrange the following numbers beginning with the smallest.
5 6 7, 8 6 5, 2 0 3
7. Using a pair of compasses, ruler and pencil only, construct an angle of 30° .

8. Abdul bought the following number of goats during the week as follows;

Day of the week	MON	TUE	WED	THUR	FRI
Number of goats	3	2	5	7	8

Work out the mean number of goats.

9. Write CXC in Hindu Arabic - numerals.

10. If Nandi buys 4 text books for shs 240,000, how much will 9 similar books cost?

11. Write in words: 3, 602

12. The time on the 24 hour clock is 13 : 42 hours. What time will it be on a 12 hour clock?

13. Find the next number in the sequence: $\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{8}$, $\frac{1}{16}$, _____

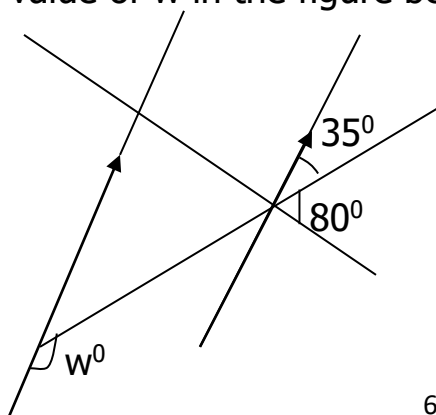
14. A trader got a simple interest of shs 188,000 after depositing shs 90,000 in a bank at an interest rate of 10% per annum. For how long was his money in the bank
15. A taxi carries 14 passengers while a bus carries 29 passengers. If the two vehicles make two journeys each, how many passengers will they carry altogether?
16. Solve the equation: $5t - 2(t + 1) = 1$
17. Change 9 base ten to base two.
18. The abase area of a cube is 25cm^2 . Calculate the volume of the cube.

19. Solve the inequality $-2p + 4 > 6$

20. The exterior angle of a regular polygon is 45° . Find the number of sides the polygon has.

21. The difference between $\frac{1}{5}$ and $\frac{1}{6}$ of a number is 7. Find the number.

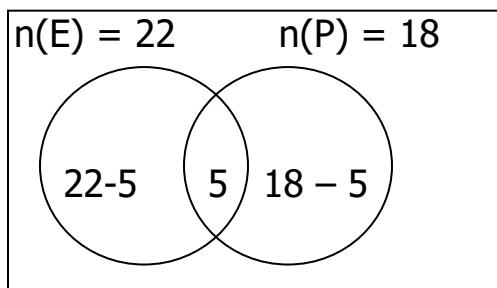
22. Find the value of w in the figure below.



23. A motorcyclist covered a distance of 42km in $3\frac{1}{2}$ hours. Calculate the average speed of the journey.

24. Study the Venn diagram below carefully and answer the questions that follow.

$$n(E) = 38$$



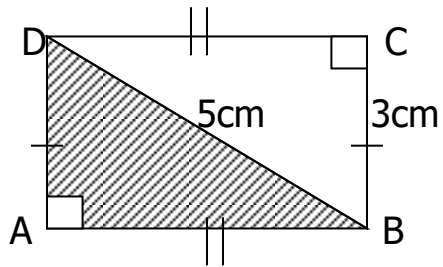
Find $n(E \cup P)$

25. Simplify: $\frac{3}{9} - \frac{1}{18}$

26. Work out: $\frac{0.25 \times 5.4}{0.2}$

27. Find the square root of 1.96.

28. Find the area of the shaded part in the figure below.



29. Solve $5 + n = 3$

30. Peter scored the following marks in a test. 9, 8, 7 and 4. Find Peter's mean score in the test.

PRIMARY SEVEN 2020

Topic 4: Simple Machines and Friction

VOCABULARY

- | | |
|------------------------|---------|
| • Friction | Force |
| • Nuisance | Moments |
| • Mechanical advantage | Wedges |
| • Inclined Plane | Axles |
| • Screws | |

MACHINES

It is a device that simplifies man's work.

How do machines simplify work

1. By changing the direction of forces.
2. By reducing the effort required to do work
3. By increasing the speed of work.

Types of machines

1. Simple machines.
2. Complex machines.

A complex machine

It is a machine that is made up of many parts and need a training to use it.

When two or more simple machines (tools) are put together a complex machine is made

Examples of complex machines

Tractor, Bicycle, Sewing machine, Car, Aero plane etc.

Simple Machine.

It is a device that is made up of few parts and does not need a training to use it.

Examples of simple machines.

A hoe	See saw	Claw hammer	Nut cracker.	Human arm.	Nut cracker.
A wheel barrow	Pincers.	Water pump	Sugar tongs.	Spade.	Sugar tongs.
A pair of scissors	Crow bar.	Bottle opener	Fishing rod	Ladder.	Stairs.

Activity

1. Why is a hoe called a machine?

.....

2. State any two ways machines simplify man's work.

i)

ii)

3. To which type of machines do we find the following machines?

a) Panga

b) Bicycle

4. Why is a spade called a simple machine?

.....

Work

Work is the energy transfer when an object move through a distance in the direction of force.

Note:

Work is measured in **Joules (J)**

The distance is measured in **Metres (M)**

How to calculate work done.

Work done is equal to force (N) multiply by distance (M) moved in the direction of force.

$$WD = F \times D$$

Example

1. A teacher carried books of 10kg through a distance of 5 meters. Calculate the work done by the teacher.

$$WD = F \times D$$

$$= 10\text{kg} \times 10\text{N} \times 5\text{M}$$

$$= 100\text{N} \times 5\text{M}$$

$$= 500\text{J}$$

2. Nankebe move a baby of 20kg through a distance of 2m. What is the work done by Nankebe?

$$WD = F \times D$$

$$= 20\text{kg} \times 10\text{N} \times 2\text{M}$$

$$= 200\text{N} \times 2\text{M}$$

$$= 400\text{J}$$

3. A frog carried its husband of 100N through a distance of 20M. Calculate the work done of the frog.

$$WD = F \times D$$

$$= 100\text{N} \times 20\text{M}$$

$$= 2000\text{J}$$

Note: Force is measured in Newtons (N)

Every one kilogram is equal to 10N (1kgf = 10N)

Mechanical Advantage of a machine.

Mechanical advantage is the number of times a machine simplifies work.

Note:

1. Mechanical advantage has no units because it is a ratio of forces i.e Load force to Effort force.
2. If the mechanical advantage of a machine is greater than one, then the machine uses less effort to overcome a greater load.
3. If the mechanical advantage of a machine is less than one, then the machine uses greater effort to overcome a small load.
4. The formula for finding mechanical advantage is

$$\text{Mechanical advantage} = \frac{\text{Load}}{\text{Effort}}$$

Activity

1. Turyagenda used a machine to lift a load of 60kg with the effort of 20kg through a distance of 10m.

a) Calculate the work done by Turyagenda

$$WD = F \times D$$

$$= 60\text{kg} \times 10\text{N} \times 10\text{m}$$

$$= 600\text{N} \times 10\text{m}$$

$$= 6000\text{J}$$

2. Find out the mechanical of the machine.

$$M.A = \frac{\text{Load}}{\text{Effort}}$$

$$= \frac{360\text{kg}}{20\text{kg}}$$

$$= 3$$

3. A man carried his wife of 100kg with the effort of 25kg through a distance of 10m.

a) What is the work done by the man?

$$WD = F \times D$$

$$= 100\text{kg} \times 10\text{N} \times 10\text{m}$$

$$= 10000\text{J}$$

b) Calculate the mechanical advantage

$$M.A = \frac{\text{Load}}{\text{Effort}}$$

$$= \frac{100\text{kg}}{25\text{kg}}$$

$$= 4$$

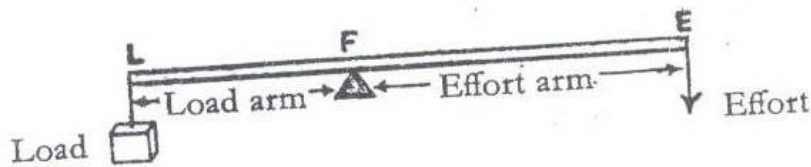
Classes of simple machines.

1. Levers
2. Inclined planes/slope
3. Pulleys.
4. Screws.
5. Wheel and axle
6. Wedges

Levers

Is a stiff rod that turns on a fixed point called a pivot or fulcrum.

Parts of a lever



1. **Effort:** is the force exerted on a machine to overcome the load.
2. **Load / resistance:** it is the weight of the body to be lifted.
3. **Fulcrum or Pivot:** is the turning point of a machine.
4. **Load arm** is the distance between the fulcrum and the load.
5. **Effort arm** is the distance between the fulcrum and the effort.

Activity

1. What name is given to a turning point of a lever?

.....

2. What name is given to a distance between the pivot and the load?

.....

3. State the force used to overcome the load.

.....

4. Why is a sea saw called a lever?

.....

5. What is load?

.....

Classes of levers.

There are three classes of levers depending on the position of the fulcrum(f), Load(l) and effort(E)

First class levers

First class lever is a type of lever where the pivot is in between a load and effort.

In this class, the effort arm is longer than the load arm.

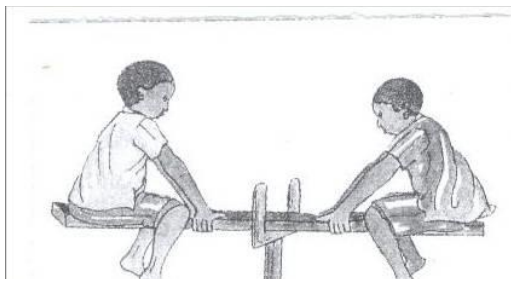
The longer the effort arm, the smaller the effort applied.

The advantage of the first class lever is that less effort is use

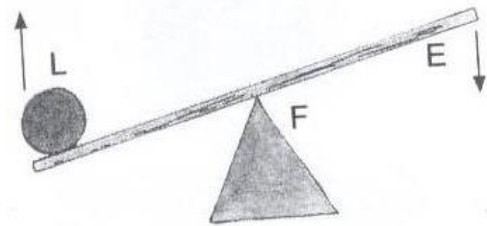
Examples of first class levers.

1 See saw

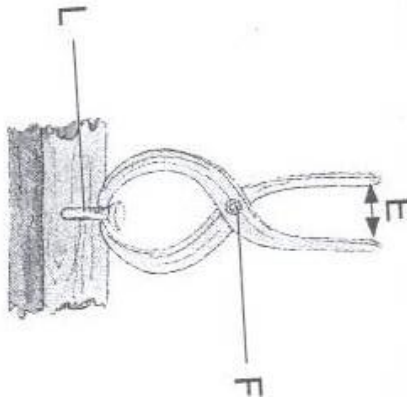
5 Crow bar



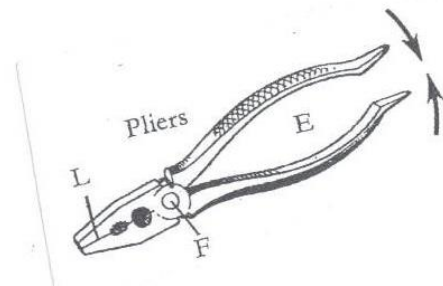
2 Pincers



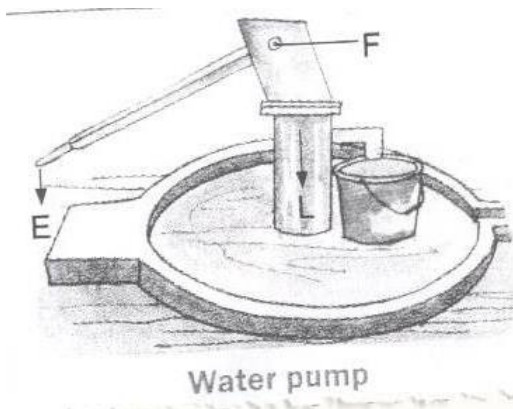
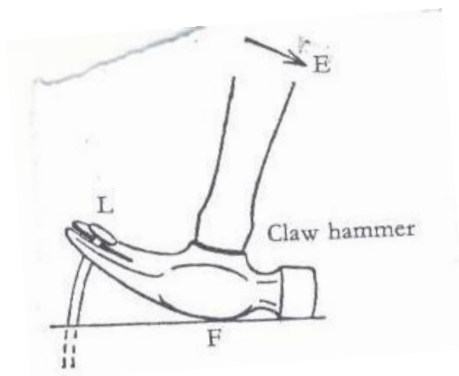
6 pliers



3 Claw hammer



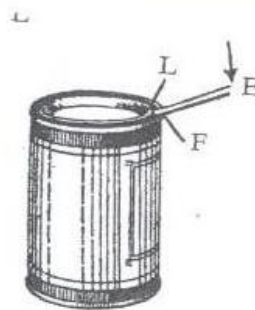
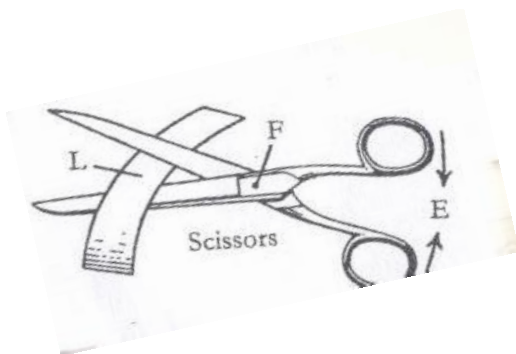
7 Water pump



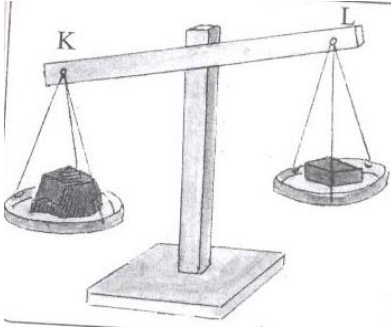
8

4 scissors

Lid opener



9 scales



Activity

1. Why is a claw hammer regarded as a first class lever?

2. How is a first class lever adapted to simplifying man's work?

3. What is the advantage of using a first class lever?

4. Use the diagram below to answer the questions that follow.

a) Name part marked

i) L _____ ii) P _____

b) Use an arrow and letter Q to show the direction of the effort on the diagram above.

c) Of point K and F, where will the user of the machine apply less effort?

d) Give a reason to your answer in (a)

Second class lever

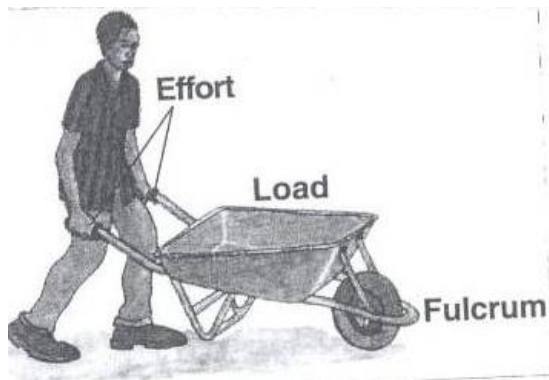
Load is between the **fulcrum** and **effort**.

The fulcrum and the effort are on either side. (FLE OR ELF)

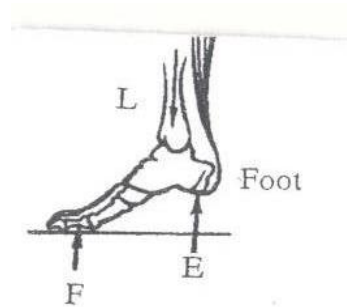
The load is closer to the fulcrum than the effort
 The effort applied is smaller compared to the load.
 First and second class levers are referred to as force multipliers

Examples of second class levers.

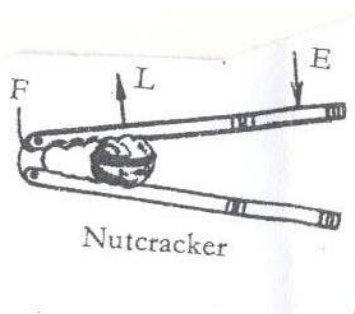
1 Wheel barrow



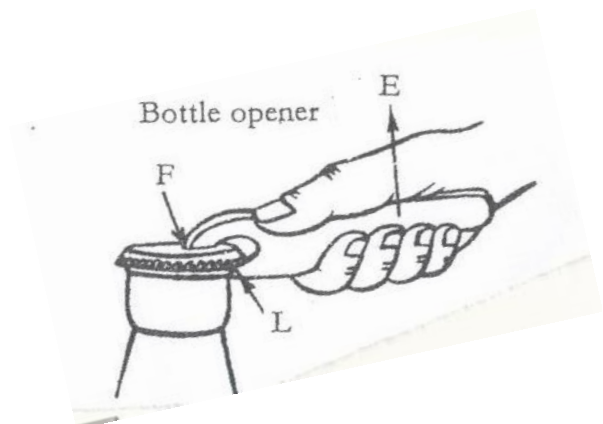
3 Human Foot



2 Nut cracker



4 Bottle opener



Questions.

1. Write down any two examples of each of the following.

- a) 1st class lever i) _____ b) second class lever i) _____
 ii) _____ ii) _____

2. State any one advantage of using first class lever?

3. Draw and name any two items in 1st class lever

4. How are machines important in life?

5. State any two ways in which machines are able to improve on the efficiency of a machine.

i) _____

ii) _____

Third class levers

Effort is between fulcrum and load

The fulcrum and the load are on the either side. (FEL)

The effort is closer to the pivot than the load

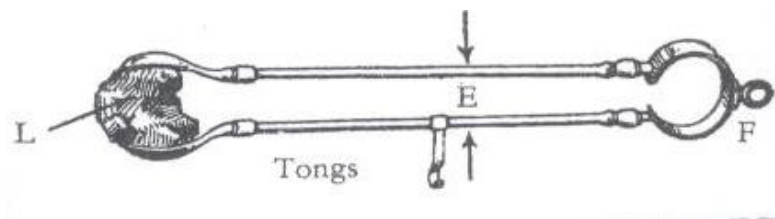
The effort used is greater than the load.

Third class levers are referred to distance multipliers.

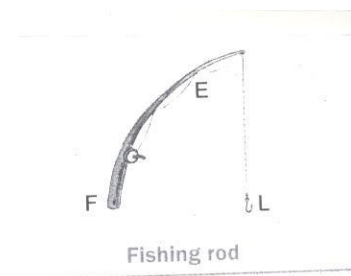
The advantage of using this class is that the effort moves through a shorter distance

Examples of third class levers

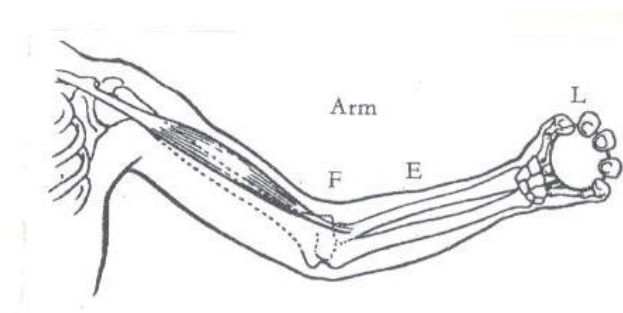
1 Sugar tongs



3 Fishing rod.

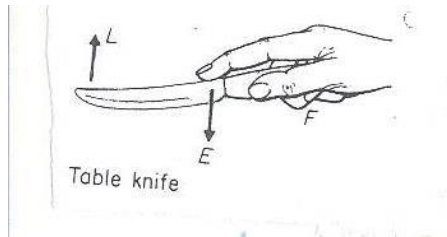


2 Human arm.



4 Spade.



**N.B**

The formula PLE or FLE can help to determine the class of lever

Activity

1. Name the class of lever where the effort is in between the load and pivot.

2. How is third class lever adapted to simplifying work?

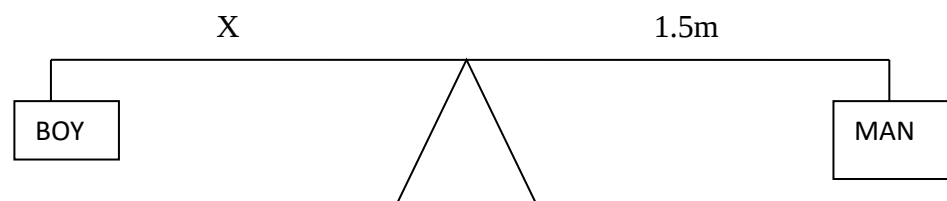
3. State the difference between **2nd class levers** and **3rd class levers** in the way they simplify work.

The principle of moments. (The law of the lever)

The load force multiplied by the load arm is equal to the effort force multiplied by the effort arm.// it states that clock wise moments are always equal to anti-clock wise moments

Examples

1. A man weighs 60 kgf. He sits 1.5 metres from the fulcrum of the see saw. How far from the fulcrum will the boy whose weight is 30 kgf sit in order to balance the man.
Let the man be the effort and the boy be the load.
Let the load be x metres.



Load x Load arm = Effort x effort arm.

$$30\text{Kgf} \times X = 60\text{kgf} \times 1.5\text{m}$$

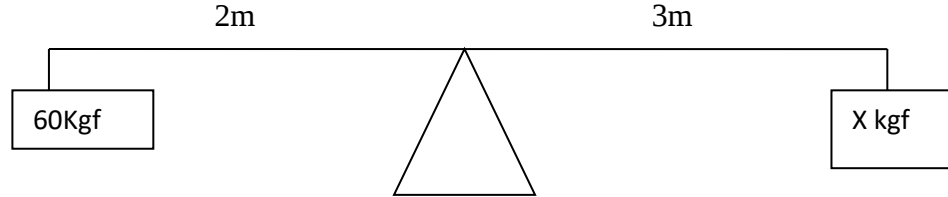
$$\underline{30x = 90}$$

$$\underline{30 \quad 30}$$

$$x = 3 \text{ metres}$$

2. A boy weighing 60kgf sits 2 metres away from the fulcrum of the see saw.

A girl sits on the other side at a distance of 3 metres from the fulcrum in order to balance the see saw. Find the weight of the girl.



Let the boy be the effort and the girl the load.

Let the girl's weight be y

Then, Load $\times$ Load arm = Effort $\times$ Effort arm

$$y \times 3\text{m} = 60\text{Kgf} \times 2 \text{ metres.}$$

$$\frac{3y}{3} = \frac{120}{3}$$

$$y = 40\text{kgf}$$

3. A weight of 120 grams at a distance 3cm from the fulcrum is balanced by a weight of 30g on the other side. Find the distance from the 30kg weight to the fulcrum.

Take 120kgf as the effort and 30kg as the load.

Let y be the distance of the load from the fulcrum.

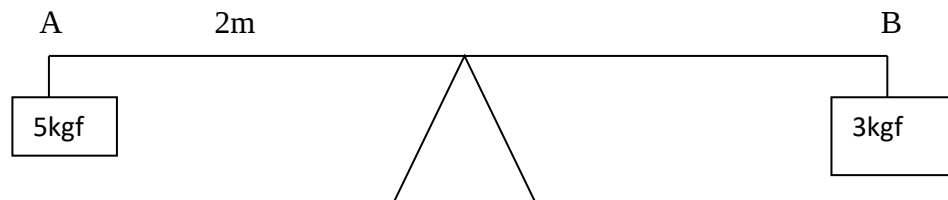
Then Load $\times$ load arm = Effort $\times$ Effort arm.

$$30 \times y = 120\text{gf} \times 3\text{cm}$$

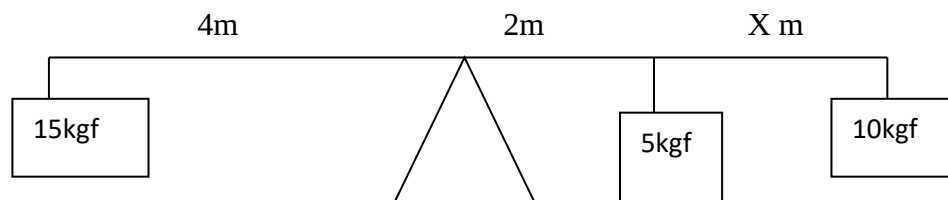
$$\frac{30y}{30} = \frac{360}{30}$$

$$y = 12\text{cm}$$

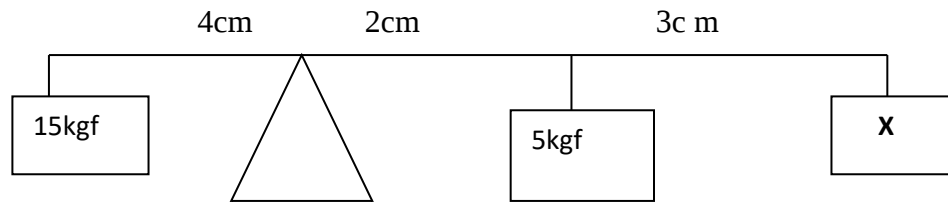
4. Using a see-saw shown below, find the length of the wooden plank AB.



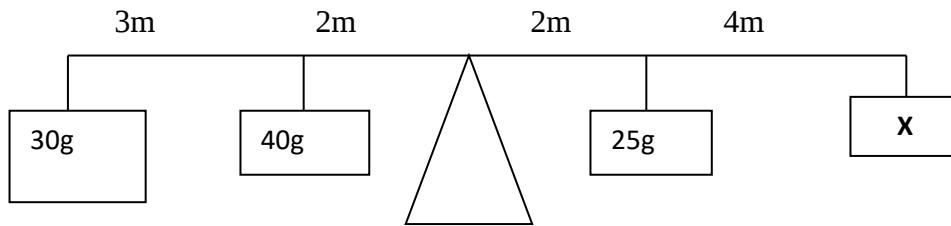
1. Find the value of X



2. Find the weight at X



3. Find the weight at X



4. How far will a 20kg boy sit to balance with a 50kg man who sat 4m away from the fulcrum of the beam?

The inclined plane (slope)

An inclined plane is a slanting surface.

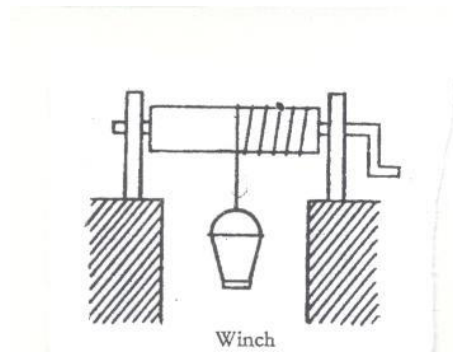
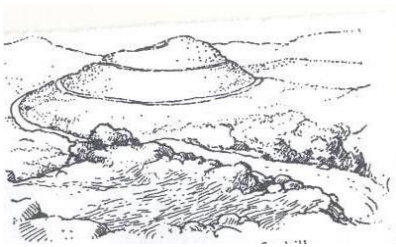
Importance of an inclined plane.

- It enables heavy loads to be raised/lowered using a lesser effort.

Examples of inclined plane

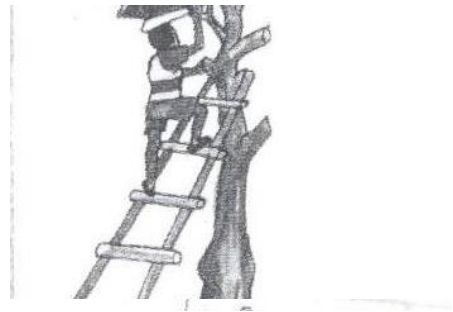
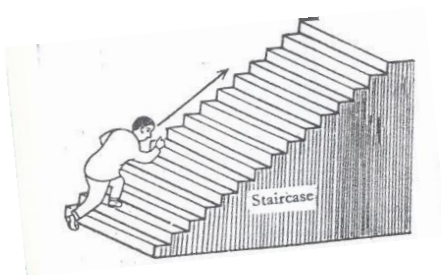
1 Winding road

3 Winch



2 Stairs/ steps.

4 Ladders



Mechanical Advantage of machines.

Mechanical Advantage is the ratio of the load to effort. i.e. $M.A = \text{Load/effort}$.

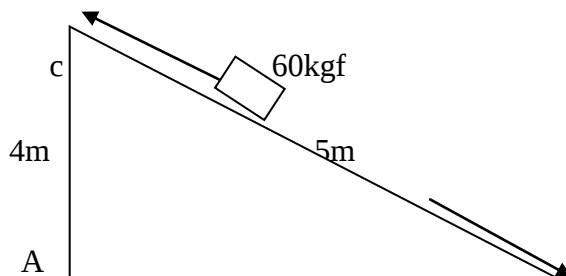
M.A is the number of times a machine simplifies work.

M.A has no units since it is a ratio.

Friction lowers M.A.

Example;

John used a slope to raise a load of 60kgf from the ground to the higher level as shown below.



Work out the following

The effort distance

=5m

The load distance

=4m

Work done

$W = F \times D$

$M.A = \frac{\text{Load}}{\text{Effort}}$

$= \frac{\text{Distance effort moves}}{\text{Distance load moves}}$

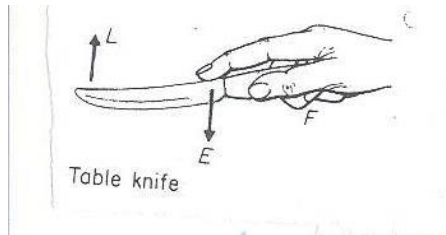
$$= \frac{5}{4}$$

WEDGES

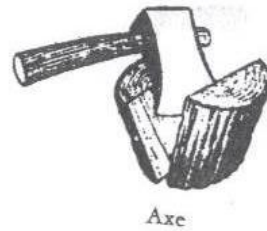
A wedge is a cutting tool. It is double inclined plane/slope.

Examples of wedges

1 Knife edge.



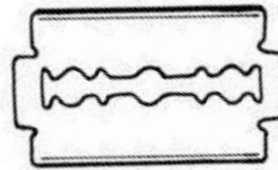
5 Axe blader



2 Hoe



6 Razor blade



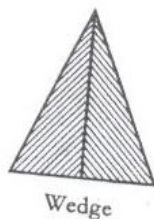
3 Nail.



7 Needle.

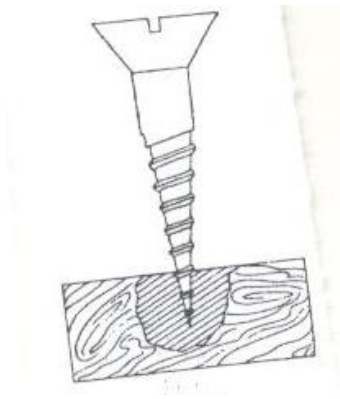


4 A wedge



SCREWS

DIAGRAM SHOWING A SCREW.



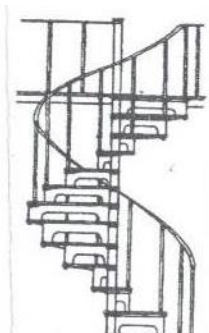
A screw is an inclined plane wound round
We use it to make our work easier.

USES OF SCREWS

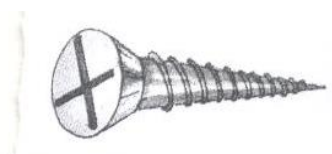
1. Lifting very heavy things e.g. screw jack.
2. It makes movement upstairs easier e.g. using a spiral staircase
3. Used to fasten things together.

EXAMPLES OF SCREWS

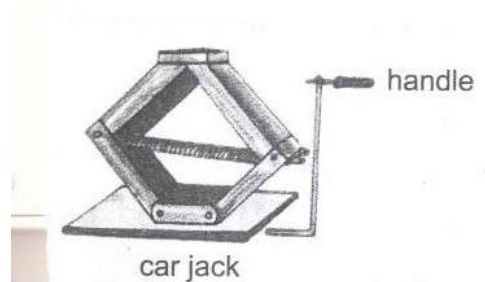
- 1 Spiral staircase



- 2 Screw nails



- 3 Screw jack



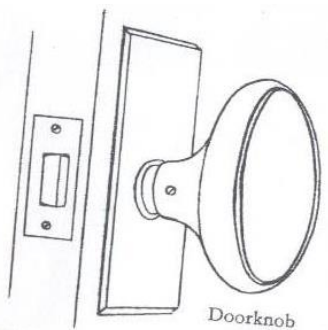
Wheel and axle

An axle is a rod passed through a wheel.
The wheel rotates on an axle.

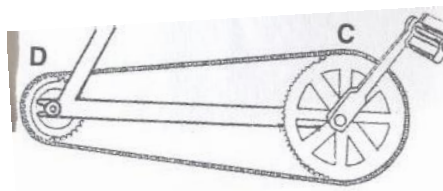
Examples of devices that use wheels and axles.

- 1 Door Knobs

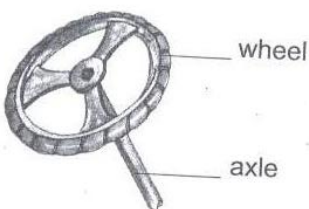
- 5 Pedal wheels



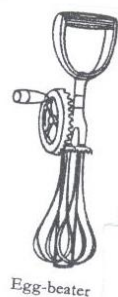
2 steering wheel



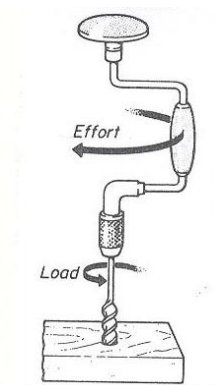
6 Egg beaters



3 Screw drivers

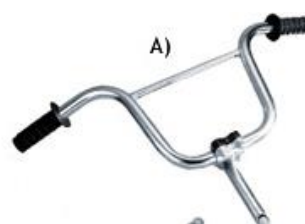
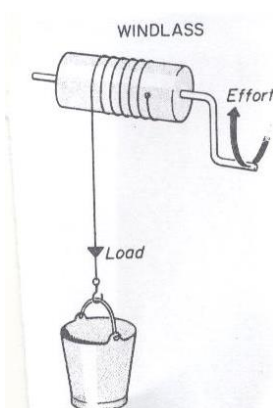


7 Brace



4 Windlass

Handles of a bicycle.



USES OF WHEEL AND AXLE

1. Drawing water from underground tanks using windlass/winch.
2. Drilling holes in wooden materials using the brace
3. Turning screws to fix things together using a screw jack.
4. It helps in loosening the screws.
5. Preparing eggs for frying using egg beaters.

Questions

1. Give any two examples of each of the following:
 - a) Wheels and axles _____,
 - b) Screws _____,
2. How are screws important to people?

3. Give any two uses of screws.
 - i) _____
 - ii) _____
4. Give any two examples of screws.
 - i) _____
 - ii) _____
5. How are inclined planes important to human beings?

PULLEYS

A pulley is a wheel with grooved rim that rotates freely about an axle through a centre. A rope or chain passes over the pulley and is prevented from slipping by the grooved

The frame which holds the pulley is called block.

IMPORTANCE OF PULLEYS.

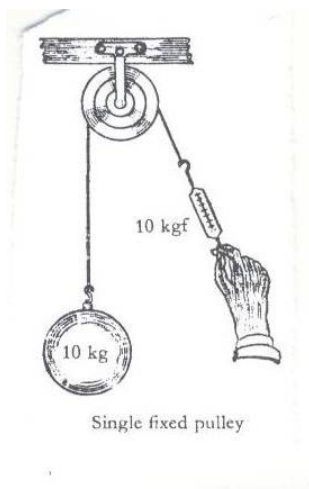
1. They help in lifting objects from the lower level to higher level.
2. They help in lifting heavy loads during building.
3. They help in off loading heavy vehicles.
4. They help in towing vehicles.
5. They are used to raise flags on the poles.
6. Help to move window curtains.

TYPES OF PULLEYS.

1. Single fixed pulley
2. Single movable pulley.
3. Block and Tackle system.

SINGLE FIXED PULLEY.

- The effort applied is equal to the load.
- It changes the direction of force
- The M.A of a single fixed pulley is one (1).
- The distance moved by the load is equal to the distance moved by the effort



Example;

If a load of 30kgf is to be raised using a single fixed pulley, find the effort needed

$$M.A = 1$$

$$L = 30\text{kgf}$$

$$E = ??$$

$$M.A = \text{load/Effort}$$

$$1 = 30/E$$

$$E \times 1 = 30$$

$$E = 30\text{kgf.}$$

SINGLE MOVABLE PULLEY

It is supported on two ropes.

The rope is pulled up wards.

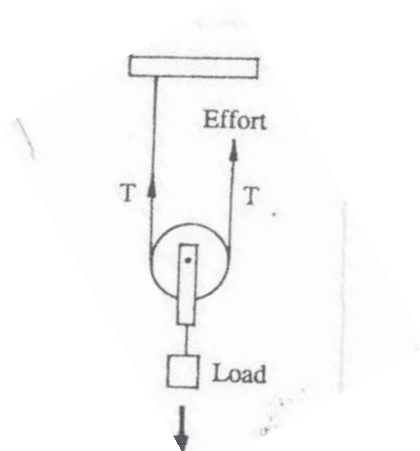
The pulley moves with the load.

Each of the ropes share a half of the effort needed.

The rope moves twice as far as the load.

The M.A advantage of single movable pulley is 2 (two)

Effort applied is half the load force. (It reduces the effort needed)



Example. If a load of 30kgf is to be raised using a single movable pulley, Find the effort needed.

$$M.A = 2$$

$$L = 30\text{kgf}$$

$$E = ??$$

$$\begin{aligned}
 M.A &= L/E \\
 2 &= 30/E \\
 2 \times E &= 30 \\
 \frac{2E}{2} &= \frac{30}{2} \\
 E &= 15\text{kg}
 \end{aligned}$$

DIFFERENCES BETWEEN FIXED AND MOVABLE PULLEY

Fixed pulley	Movable pulley
Work is done faster	Work is slower
Change direction of force	No change of in direction of force
Force used is equal to the load.	Effort applied is half the load force.

Questions.

- Give **any two** types of pulleys.
 i) _____ ii) _____
- How are pulleys important at school?

- Calculate the Mechanical Advantage of a machine that needs an effort of 20kg to overcome a load of 60 kg.

- State **one** difference between a single fixed pulley and a single movable pulley.

- Cite **any two** importance of the rope on a pulley.

- _____
- _____

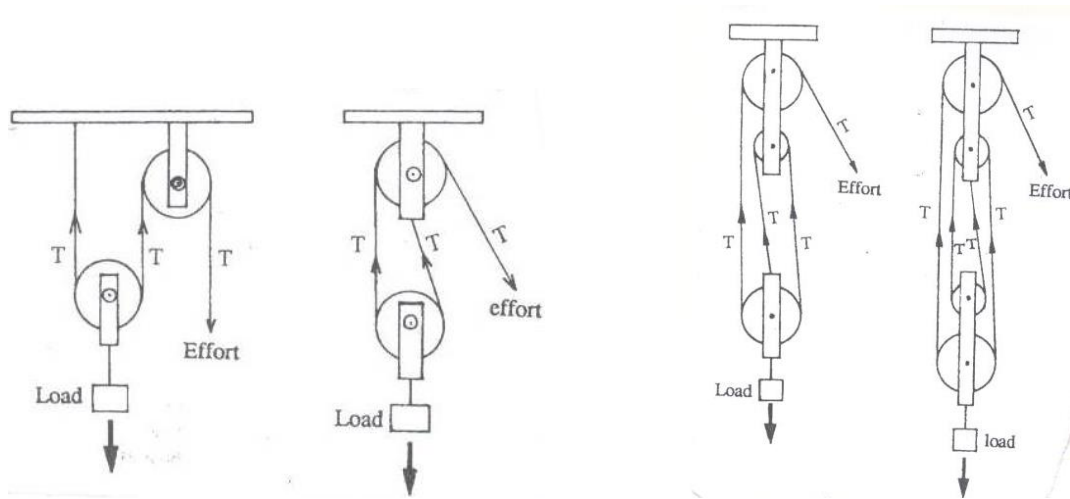
BLOCK AND TACKLE SYSTEM.

It does work more easily because it is a combination of both fixed and movable pulleys.

It changes direction of force.

It reduces effort needed.

The ratio of load to Effort is determined by the number of pulleys.



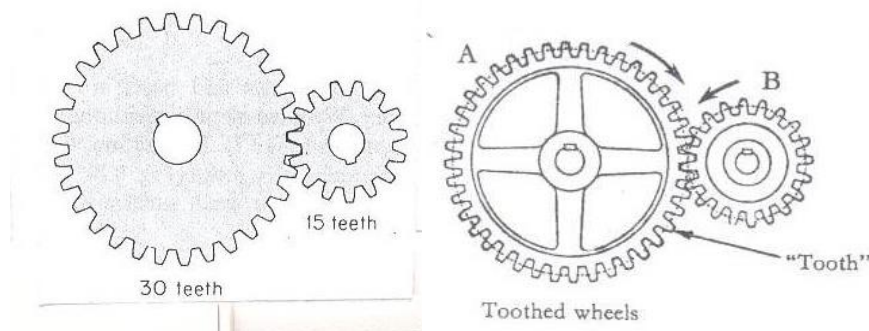
GEARWHEELS/COG WHEELS OR TOOTHED WHEELS

A gearwheel is a special form of the wheel

It has teeth around its edge.

These teeth interlock with the teeth of another gear wheel.

When one turns it causes the other one to turn.



If A has 30teeth and B has 15 teeth, how many rotations does B make in one revolution?

30divided by 15

=2 turns.

FRICTION

- Is the force that opposes movement of objects.

Types of friction

1. **Static friction:** It is found in objects which are fixed in one position.
2. **Sliding or rolling friction:** It is found in moving objects.
3. **Viscosity friction:** This occurs in liquids and gases.

Properties of friction.

- i. There is more friction with rough surfaces than with smooth or slippery ones.
- ii. The greater the load, the greater the friction force (weight increases friction)
- iii. Whenever friction occurs heat is produced.

Friction as a useful force in our daily life.

1. It helps in moving and stopping vehicles.
2. It helps when writing.

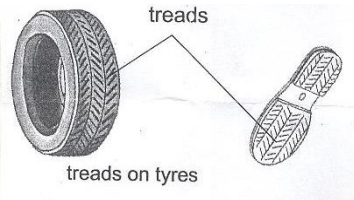
3. It helps when sharpening objects.
4. It helps when walking.
5. It helps in lighting match sticks.

Friction as a nuisance force/ disadvantages.

1. It wears away things e.g. shoe soles, parts of engines.
2. It hinders work as it makes us use a lot of force.
3. It produces unnecessary heat and noise.

How to increase friction.

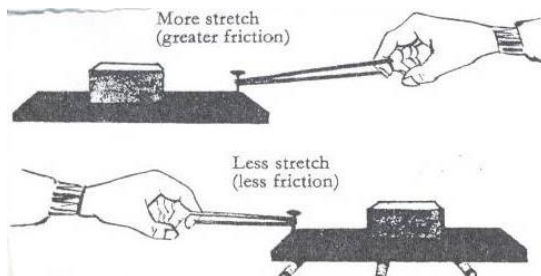
- i. Making smooth surfaces rough.
- ii. Putting treads on vehicle tyres / on shoe soles.



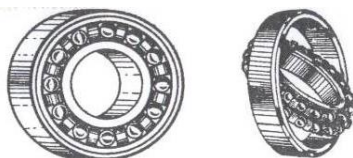
- iii. Putting spikes on sports boots.
- iv. Putting grips on handles of bicycle.

How friction can be reduced.

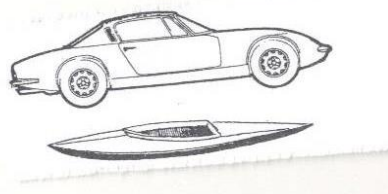
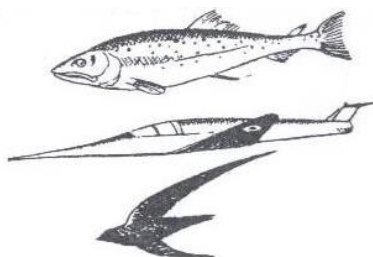
- i. **Using rollers;** they decrease areas of contact between moving parts.



- ii. **Using ball bearings;** these are round metallic balls they reduce friction by keeping moving parts separated.



- iii. **Lubricating;** This involves using oil or grease. Oil and grease are referred to as **lubricants**.
- iv. Stream lining objects like planes, cars



- v. Making rough surfaces smooth.

Questions.

1. State a brief meaning to the term friction.

2. In **one** way explain how friction can be increased on a slippery surface.

3. Write down **any two** advantages of friction in our lives.

i) _____

ii) _____

4. Why is friction said to be a nuisance force?

5. Why are some objects stream lined?

6. State **any two** items that are stream lined?

i) _____

ii) _____