- **Science Class six**

- **REPRODUCTIVE SYSTEM**
- **MALE REPRODUCTIVE SYSTEM**

- Parts of the male reproductive system include
- Penis
- Testis
- Urethra
- Sperm duct
- Glands
- Male parts
- Female reproductive system
- Parts of the female reproductive include
- Ovary
- Oviduct
- Uterus
- Cervix
- Vagina

- Female parts
- Functions
- Ovary-produce the ova after every 28 days
- Oviduct-where fertilisation takes place
- Uterus-where the foetus develop till maturity
- Cervix-a ring of muscle that holds the foetus to maturity
- Testis-they produce sperms
- Urethra-allow passage of sperm and urine in men

- **Physical changes**
- In both boys and girls

- Increase in height and weight
- Hair appear in the armpit and the pubic area
- Pimples may appear on the face
- <u>In boys only</u>
- The voice breaks
- They experience wet dreams
- The chest broadens

- <u>Girls only</u>
- The breasts enlarge
- Voice become smooth
- They experience menstrual flow
- Hips broaden

- **<u>Emotional changes</u>**
- They mainly affect the feelings, they include;
- Feeling shy
- Embarrassment of,
- Their height
- Enlarged breasts
- Wet dreams
- Menstrual flow
- Get moody very fast

- **<u>HEALTH EDUCATION</u>**

- **IMMUNISATION SCHEDULE**
- They are diseases that a child is immunised against before they are 5 years.

- Most of the diseases are dangerous if they infect a young child.

- **Immunizable diseases**
- They are diseases that one can be immunised against;
- Typhoid
- Yellow fever
- Meningitis
- Tuberculosis
- Measles
- Tetanus
- **Hiv and aids testing**
- Reasons of getting tested
- To overcome fear
- To stop the spread of HIV
- To plan your future
- To start medication early
- To decide on marriage partner
- To plan for your family

- Pre-test counselling; it is the testing one receives in the VCT centre before being tested.
- Post-test counselling; it is the testing one receives in the VCT after being tested

- **Effects of HIV/AIDS to the country**
- Reduced agricultural production
- Poor economy
- Death of skilled people
- A lot of money is spent on treatment
- Congestion in the hospitals
- **Effects to the family**
- Sadness in the family

- Family income is spent on treatment
- Children may become orphans
- Children may drop out of school to take care of the sick parents
- The family may feel discriminated.
- **Effects of hiv to the individual**
- Poor health
- Poor performance
- Spending of a lot of money
- Feeling stigmatized

- **PLANTS**

- **PARTS OF A PLANT**
- Main parts of a plant are;
- Roots
- Stem
- Leaves

- **FLOWER**
- flower
- The main reproductive part of a plant is a flower.
- Parts of a flower include;
- Male part
- Female part

- Functions of different parts;
- Male parts
- Anthers; produce pollen grain(male cells)
- Filament; it supports the anthers

- Female parts

- Stigma; receives the pollen grains
- Style; holds the stigma
- Allow the development of pollen tube
- Ovary; holds the ovules
- Develops in a fruit
- Ovule; female cell
- Develops into seeds

- **POLINATION**
- it is the transfer of pollen grains from the anthers to the stigma of the same kind
- Agents of pollination include;
- Wind
- Insects
- water

- Types of pollination
- There are two types;
- Self pollination-it is the transfer of pollen grains from the anthers to the stigma of the same plant.
- Cross pollination-it is the transfer of pollen grains from the anthers to the stigma in different plants of the same type.

- Characteristics of insect pollinated flowers
- They have nectar
- Brightly coloured
- Have big petals
- Sticky stigma
- Small amount of pollen grains

- Characteristics of wind pollinated flowers
- Small in size

- Dull in colour
- Powderly pollen grains
- Produce large amount of pollen grains
- Loosely attached filaments
- **Germination**

- It is the change of the seed into a seedling
- Conditions necessary for germination
- Air (oxygen)
- Moisture(water)
- Warmth(temperature)

- Types of germination
- Epigeal germination; the seed comes out of the soil during germination e.g. Beans
- Hypogeal germination; the seed remains in the soil during germination e.g. maize
- Types of germination
- Hypogeal germination
- **Parts of a seed**

- Testa
- Helum
- Micropyle
- Cotyledon
- Radical
- Plumule.

- **SOLAR SYSTEM**

- Venus is the brightest and the hottest

- Mercury takes the shortest time to go round the sun
- Mars is known as the red planet
- Jupiter is the largest planet
- Saturn has visible rings around it.
- Asteroids are found in between mars and Jupiter
- Planets ;smallest to largest
- **Rotation**;
- it is the process in which the Earth spins on its own axis
- The Earth rotates on its own axis
- The earth takes 24 hours to make a complete rotation.
- The rotation cause day and night
- **Revolution**

- It is the process in which the Earth moves around the sun.
- The path that is followed by the Earth as it goes around the sun is called orbit
- The Earth takes 365 ¼ days to make one complete revolution.
- Revolution causes seasons

- ***A*NIMALS**
- **Animal feeds**
- They are classified into
- Pastures
- Fodder
- Conserved feeds
- Commercial feeds
- pasture
- They are grasses and legumes that animals feed on directly. They are classified into;
- Pure stand ; only consist of either grass or legumes only
- Mixed stand ; consists of both grass and legumes

- **Grass**

- Examples of grass include;
- Kikuyu grass
- Star grass
- Giant sataria
- Rhodes grass
- **Legumes**

- There are 4 main legumes used as pasture, they include;
- Clover
- Lucerne
- Glycine
- Desmodium.
- **Fodder**

- They are crops that are hervestered or cut then given to the animals. examples;
- Napier grass
- Guatemala grass
- Potato vines
- Maize stalks
- Kales
- Sugar beet

- **Conserved feeds**

- They are animal feeds that are preserved in a special way to be used in future.
- They are divided into two;
- Hay
- sillage

- **Hay**

- It is cut and preserved by drying
- It is stored in bales
- **Silage**

- It is harvested when it is about to flower. It is preserved by fermentation.
- It is stored when still green or in the succulent state.
- It is stored in silos
- The molasses is added to speed up fermentation.
- **Methods of grazing**
- Rotational grazing
- Zero grazing
- herding
- Rotational grazing
- They include
- Tethering
- Paddocking
- Strip grazing
- **Tethering**

- The animal is tied to a peg or post using a rope
- The rope allows the animal to graze within a restricted area.
- It is practised were few animals are kept
- **Paddocking**

- The land is divided into small areas known as paddocks using a permanent fence
- A watering point is usually provided in each paddock.
- **Strip grazing**

- The animals are enclosed in a small portion of the pasture using a temporary fence.
- An electric fence is usually used.
- **Zero grazing**
- It is also known as stall feeding
- The animals are confined in a permanent structure (shed)
- The shed should have feeding area, watering area, sleeping area and milking area.
- **Herding**

- It is a type of grazing where animals are allowed to graze freely on large areas of land.

- **Water**

- **Waterborne diseases**
- They are diseases that are spread through contaminated water. They include:
- Cholera
- Typhoid
- Bilharzia.
- **Cholera**

- It is caused by bacteria. it can cause death within 24 hours if not treated. It causes death through dehydration.
- Signs and symptoms
- Violent diarrhoea (rice water).
- Vomiting.
- Severe abdominal pains
- Wrinkled skin due to dehydration.
- Sunken eyeballs

- **Typhoid**

- It mainly affects the intestines. It is also known as typhoid fever.
- Signs and symptoms
- Pain in the joints and muscles
- High fever
- Abdominal pains
- Skin rash
- **Bilharzia**

- It is caused by bilharzia worms or blood flukes. It is carried by water snails.
- The disease mainly affect the bladder and intestines
- Bilharzia worms enter the body through the skin.
- Signs and symptoms
- Blood in urine and stool
- Coughing may occur
- Abdominal pain
- Swimmers itch
- Fever

- **Soil**

- **Soil erosion**
- Soil erosion is the carrying away of the top soil from one place to another.
- **Agents of soil erosion**
- They are things that carry soil from one place to another. They include;
- Water
- wind

- **Factors that influence soil erosion**
- Slope of land
- Type of soil
- Vegetation cover
- Amount of rainfall
- Human activities
- **Types of soil erosion**
- Splash erosion
- Sheet erosion
- Rill erosion
- Gulley erosion
- **Splash erosion**
- It occurs when raindrops fall on bare loose soil.
- It can be controlled by;
- Planting cover crops
- mulching

- **Sheet erosion**
- It occurs when water or wind carries away thin uniform layers of the topsoil.
- It is not easily noticed
- It occurs on gentle slopes.
- Best controlled by;
- Planting cover crops
- Planting trees
- Landslides are caused by sheet erosion
- .
- **Rill erosion**
- It occurs when water flows down a slope and make small shallow channels. The channels are known as ***rills.***
- it is common on gentle sloping areas.
- It can be controlled by;

- Terracing
- Contour farming
- Strip cropping

- **Gulley erosion**
- It occurs when water make deep channels , they are known as ***gulleys***.
- Gulley erosion leads to the formation of V-shaped or U-shaped channels.
- It is common on bare hill slopes.
- It can be controlled by;
- Gabions
- Porous dams
- Check dams

- **Food and nutrition**

- **Food preservation**
- It is the process of storing and handling food properly so as to stop or slow down its spoilage.
- Reason for preserving food
- To reduce food wastage
- T prevent it from being spoilt
- For easy transport
- To make food available when out of season.
- **Methods of food preservation**
- Food preservation is classified into;
- Traditional methods
- Modern methods
- **Traditional methods**
- They include;

- Smoking- forms a coat
- Drying- reduce moisture
- Salting- reduce moisture
- Use of honey- prevents oxygen
- Use of ash- reduce moisture
- **Modern methods**
- Canning-killing germs and preventing oxygen
- Refrigeration- low temperature
- Freezing- low temperature

- Drying is both traditional modern method of preserving food. It is also the cheapest method of food preservation.

- **Energy**:
- **Light**

- How light travels
- Light travels in a straight line away from the source.
- Light travels to all directions from the source.

- **Transparent materials**
- They are materials that allow all light to pass through them and one can see through them clearly.
- Examples:
- Clear glass
- Clear water
- air
- Uses of transparent materials
- They are used in making:
- Car windscreens
- Spectacles
- Window panes

- Lamps
- Glass walls
- **Translucent materials**

- They are materials that allow only little light to pass through them.
- Examples:
- Frosted glass
- Tracing paper
- Oiled or waxed paper
- Uses of translucent materials
- They are used in making:
- Skylights
- Toilet and bathroom window panes
- Ambulance windows.
- **Opaque materials**

- They are materials that do not allow any light to pass through them.
- When light hits an opaque materials a shadow is formed.
- Examples:
- Wood
- Stone
- metals
- **Reflection of light**

- Reflection is the bouncing back of light when Materials that reflect light are called reflectors.
- Reflection happens when light hits a smooth shinny surface.

- **Types of reflection**

- Regular reflection
- Irregular reflection(diffused)
- Regular reflection
- Irregular (diffused)
- <u>Characteristics of the image in a plane mirror</u>
- The image is upright
- The image is behind the mirror
- The image is the same size as the object
- The image is laterally inverted.
- **<u>Refraction of light</u>**
- It is the process in which light bends or changes direction when it moves from one medium to another. (air to water)

- **<u>Effects of refraction</u>**
- Objects appear bent or broken
- Objects appear bigger
- Swimming pool appear shallower

- <u>Making a rainbow</u>
- A rainbow is formed by the refraction of light. To be formed *raindrops* and *sunshine* is required.
- The process of splitting light into seven different colours is known as ***dispersion***.
- A group of seven colours in the rainbow is known as ***spectrum***.

- **<u>Properties of matter</u>**

- <u>Composition of air</u>
- Air is a mixture of gases
- Air mainly consists of :
- Gases

- Water vapour
- Dust particles
- Components of air
- **Components of air**
- **Uses of oxygen**
- Breathing (Respiration)
- Germination
- Burning (Combustion)
- Rusting.

- **Uses of carbon dioxide**
- Photosynthesis
- Preserve soft drinks
- To make fire extinguishers
- Used in baking
- Used in making dry ice.
- **Uses of nitrogen**
- Used by plants to make proteins
- Used to preserve semen
- It is taken in through the roots as ***nitrates***. Leguminous plants are able to convert nitrogen to nitrates.

- **Uses of inert gases**
- They include Argon, Neon, Helium and Krypton
- Used in electric bulbs and light tubes
- Used in coloured advertising signboards.
- Used in hot air balloons.

- **Making work easier**

- **Force**

- Force is a pull, push or lift.
- It is measured in Newtons (N)
- A moving object is said to be in motion while an object at rest is said to be stationary.
- Force is measured by the use of a ***spring balance.***
- Examples of force
- Force of gravity (weight)
- Frictional force
- Magnetic force
- Inertial force
- **Effects of force**
- Makes an object to start moving
- Stops a moving object
- Change direction of a moving object
- Speeds up a moving object
- Change the shape of an object.

END