PRIMARY WORK BOOK

ESSENTIAL BACK UP TOOL FOR SUCCESS

ESSENTIAL BACK UP TOOL FOR SUCCESS IS A SERIES OF LEARNING THE SOURCE MATERIALS ORGANISED FOR USE AFTER THE TEACHER HAS INTRODUCED AND EXPLAINED THE CONCEPT TO THE LEARNER.

ESSENTIAL BACK UP TOOL FOR SUCCESS COVERS PRIMARY SYLLABUS FROM **PRIMARY ONE TO PRIMARY SEVEN** IN ALL SUBJECT ASPECTS THAT IS ENGLISH, SOCIAL STUDIES, INTEGRATED SCIENCE, MATHEMATICS, LITERACY (FOR LOWER CLASSES) AND RELIGIOUS EDUCATION.

THIS TOOL IS WELL SUMMARISED WITH RELEVANT EXPLANATIONS, FOLLOW UP EXERCISES AND ACTIVITIES IN LINE WITH TERM ONE WORK AS PRESCRIBED BY THE NATIONAL CURRICULUM DEVELOPMENT CENTER , UGANDA.

EACH OF THE ABOVE ASPECTS HAS A VARIETY OF DIFFERENT FORMS OF ACTIVITIES TO ENHANCE MASTERY.

THIS WORK BOOK IS ORGANISED BY MARKS GATE INTERNATIONAL (MGI) IN CORROBORATION WITH STANDARD HIGH SCHOOL ZZANA (STAHIZA)

THIS TOOL HAS SERIES IN TERMS THAT IS (TERM ONE, TERM TWO,   TERM THREE)

Here in is an extract of the material that compose a whole book. In case you are interested in the complete sets of books, contact; 0772511120/0705283741

P.6 INTEGRATED SCIENCE WORK BOOK – TERM ONE

THEME   :   THE WORLD OF LIVING THINGS

TOPIC   :   CLASSIFICATION OF ANIMALS

SUB TOPIC: LIVING THINGS

- Living things are things that have life.

Main groups of living things.
- Plants
- animals

Examples of living things;
- Goats
- Mango plants
- Chicken
- Pigs
- Grass hoppers
- Rabbits
- Maize plants

Characteristics of living things
a) Living things respire.
b) Living things feed.
c) Living things respond to stimuli.
d) Living things grow.
e) Living things reproduce.
f) Living things excrete.

Classification of living things
- Classification is the grouping of organisms according to common characteristics and features.

Common characteristics and features used in classification of living things/factors considered when classifying living things
1. Number of legs
2. Mode of breathing
3. Response to stimuli
4. Mode of reproduction
5. Habitat
6. Body divisions
7. Mode of movement
8. Mode of feeding

Reasons for classifying living things

- For easy identification

Note:
Living things are classified into five groups called **kingdoms.**

KINGDOMS OF LIVING THINGS

- Animal kingdom
- Plant kingdom
- monerans
- Fungi kingdom
- Protoctista/protist kingdom

1. <u>Animal kingdom</u>

Animals are unable to make their own food.
Therefore, they feed on already made food**.**

Characteristics of animals
- Animals are multicellular.
- Animals cannot make their own food.
- They feed on already made food.
- Animal cells have a cell membrane.
- Their cells don't have cell walls

Differences between plants and animals

Plants	Animals
o Make their own food o Plants contain chlorophyll o Growth occurs only at the tips of roots and shoots o React slowly to stimuli	o Feed on already made food. o Don't have chlorophyll o Growth occurs equally on all parts of the body o React quickly to stimuli

1. Why can't animals make their own food?

   ....
   ....

2. What is the main difference between plants and animals?

   ....
   ....

3. How is the feeding of animals different from that of plants?

   ....
   ....

Animals are divided into two major groups.
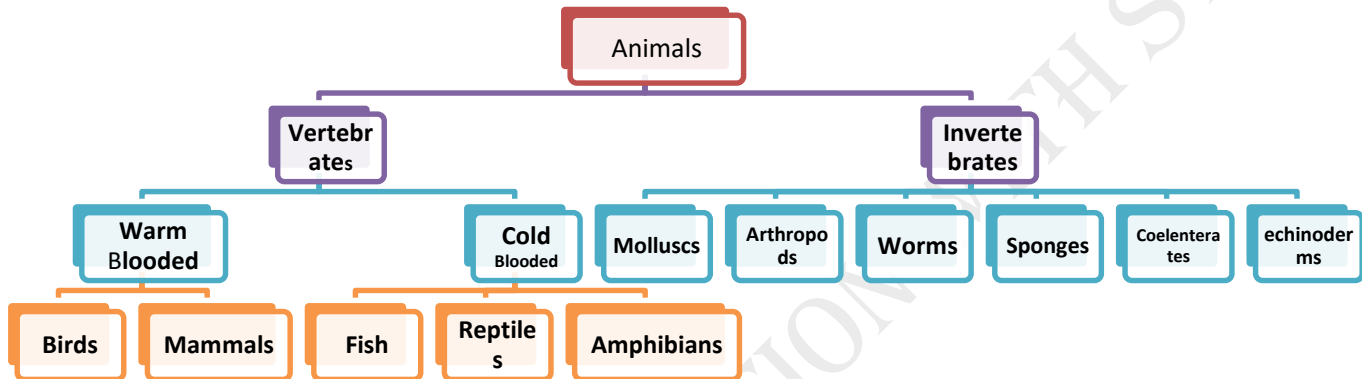- Vertebrates
- Invertebrates

- **VERTEBRATES**

Are groups of animals with a back bone or vertebral column.

Classes of vertebrates
- Mammals
- Birds
- Reptiles
- Fish
- Amphibians

Classification of animals

```
                        Animals
              ┌────────────┴────────────┐
         Vertebrates              Invertebrates
      ┌──────┴──────┐      ┌────┬────┬────┬────┬────┬────┐
  Warm        Cold    Molluscs Arthro- Worms Sponges Coelen- echino-
  Blooded     Blooded          pods                  terates derms
 ┌──┴──┐   ┌───┼────┐
Birds Mammals Fish Reptiles Amphibians
```

VERTEBRATES:

- Vertebrates are animals with backbones.

Characteristics of vertebrates

- They have an Endo (internal) skeleton.
- They have a large brain protected by the skull (cranium).
- They have back bones.
- They have water proofed skin

Note: A skeleton is a supportive structure of an animal

1. Of what importance is a skull to vertebrates?

   ....

   ....

2. Which part of the skeleton protects the brain?

   ....

3. What type of skeleton is possessed by vertebrates?

....

4. Why is a snail considered to be an in vertebrate?

....

....

5. Give any one feature common to all vertebrates.

....

6. Identify any three types of skeleton.

....

NB: Vertebrates are also sub grouped into two.

Sub groups of vertebrates

- Warm blooded (homoeothermic)animals
- Cold blooded (poikilothermic) animals.

Warm blooded (homoiothermic)

- Are animals that have a constant body temperature.

Groups of warm blooded animals
✓ Mammals   ✓ Birds

Cold blooded (poikilothermic)

- Are animals whose body temperature changes according to the surrounding.

Groups of cold blooded animals
✓ Fish   ✓ Amphibians
✓ Reptiles

1. MAMMALS

- Mammals are groups of vertebrates with mammary glands.
- Mammary means breasts.

General characteristics of mammals
- They are warm blooded.
- Their bodies are covered with fur: **prevent heat loss from the body.**
- All mammals care for their young ones.

- They give birth to live young ones except the egg laying mammals.
- They feed their young ones on milk from their mammary glands.
- They breathe through lungs.
- They have well developed ear lobes **(Pinnae).**
- Their hearts are divided into four chambers.
- They undergo internal fertilization.

Main characteristics of mammals.
- They give birth to live young ones.
- Their bodies are covered with fur.
- Have mammary glands.

Note; animals that give birth to live young ones are called **viviparous animals**

Groups of mammals
- Primates (fingered mammals)
- Cetaceans (sea mammals)
- Carnivores (flesh eating mammals)
- Ungulates (hoofed mammals)
- Rodents (gnawing mammals)
- Marsupials (pouched mammals)
- Insectivores (insect eating mammals)
- Chiroptera (flying mammals)
- Monotremes (egg laying mammals)

A. Primates
- Primates are mammals with a well-developed brain.
- Primates are the most advanced group of mammals.

Characteristics of primates
- They have a well-developed brain.
- They have five fingers on their hands and five toes on their feet.
- They have four sets of teeth

Note
- Primates are omnivores i.e. feed on both meat and vegetation.
- Primates use front limbs for holding and hind limbs for walking.

What are omnivorous animals?

Are animals that feed on both meat and vegetation

Examples of primates
- Man
- Gorilla
- Baboon
- Apes
- Monkeys
- Bush baby
- Chimpanzee

ACTIVITY

1. What characteristic of animals enables them to multiply and continue with life?

   ....

2. Why are animals referred to as multicellular organisms

   ....

3. Differentiate between vertebrates and vertebrates.

   ....

   ....

4. Why are mammals said to be homoeothermic animals?

   ....

   ....

5. Why is man said to be a mammal?

   ....

6. To which group of vertebrates does a baboon belong?

   ....

7. Why are apes classified as primates?

   ....

8. To which group of mammals are human beings classified?

   ....

9. What scientific name is given to animals that give birth to live young ones?

   ....

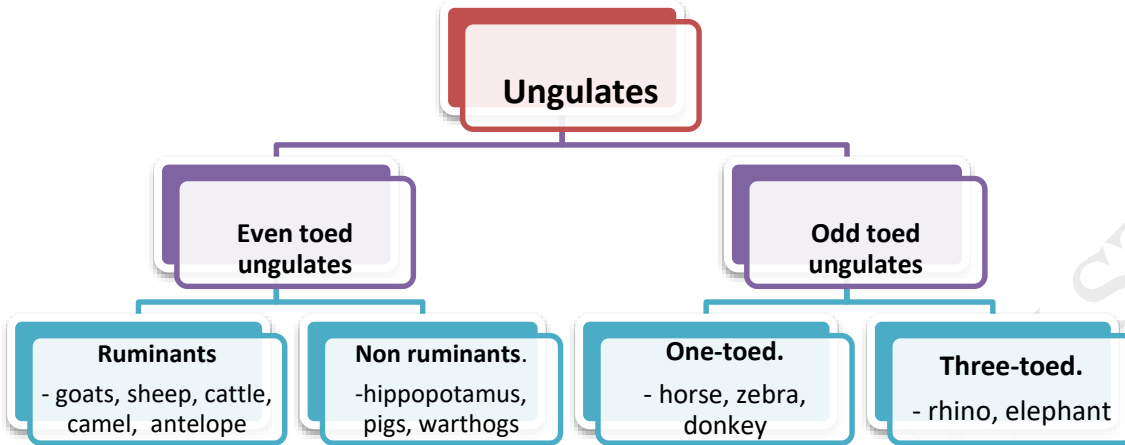## B. Ungulates (hoofed mammals)

Are hoofed mammals that feed on vegetation.

Note; animals that feed only on vegetation are called **herbivorous animals**

Groups of ungulates
- Even toed ungulates
- Odd toed ungulates

Classification of ungulates

```
                         Ungulates
          ┌─────────────────────┴─────────────────────┐
     Even toed                                    Odd toed
     ungulates                                    ungulates
   ┌──────┴──────┐                           ┌──────┴──────┐
 Ruminants    Non ruminants.            One-toed.      Three-toed.
 - goats,     -hippopotamus,           - horse, zebra,  - rhino, elephant
 sheep, cattle, pigs, warthogs          donkey
 camel, antelope
```

Even toed ungulates
- Are animals whose toes are in even numbers.

Groups of even toed ungulates.
- Ruminants
- Non-ruminants

Ruminants.
- Are ungulates that chew cud and have four chambered stomachs.

Note; The four chambers include;
- ✓ Rumen
- ✓ Reticulum
- ✓ Omasum
- ✓ Abomasum

ACTIVITY

1. Give any one difference between ruminants and non-ruminants.

   ....

   ....

2. What do we call the true stomach of ruminant animals?

   ....

3. Use the diagram below to the following questions

4. What does the animal with such a foot feed on?

....

5. Name any one product obtained from part X.

....

6. Give any two examples of animals with such a foot.

....

7. What does the animal with such a foot use for defense against enemies?

....

Non-ruminants.
- Are ungulates that have a single stomach and do not chew cud.

C. Carnivores (flesh eating mammals)

- These are mammals which feed on flesh (meat).
- They are also called **preying mammals**.

Characteristics of carnivores/carnivorous

- They have long stout legs: **for running very fast.**
- They have well-developed canines for **tearing flesh**.
- They have strong curved claws for **grabbing prey**.
- They have a very good sense of smell.
- They have good eye sight.
- They have soft pads in their feet to move softly without making noise.

NB: Carnivores are sub-divided into two groups.
   Groups of carnivores
- Cat family: **resemble cats.**
- Dog family: **resemble dogs.**
-

Classification of carnivores

Dog family	Carnivores	Cat family
Domestic dog,		Domestic cats, leopard, tiger

wolf, hyena, jackal, fox   lion, wild cat cheetah,

Note:
- Some carnivores (dog family) are scavengers e.g. the hyena and jackals.
- Others are predators (cat family). They hunt and kill prey.

ACTIVITY

1. Why is a lion called;

a) Carnivore

……………………………………………………………………………………………

b) Predator

……………………………………………………………………………………………

2. How are strong curved claws important to a leopard?

……………………………………………………………………………………………

3. State the difference between a leopard and hyena in their way of feeding.

……………………………………………………………………………………………

4. How is a predator different from a scavenger?

……………………………………………………………………………………………

D. Rodents (gnawing mammals)
These are mammals with well-developed incisors for chewing rapidly.

Characteristics of rodents
- Have well developed incisors for biting hard surfaces.
- They produce many young ones at once.
- They have strong claws for digging the ground.
- They are called gnawing mammals, because **they use their incisor teeth to bite hard surfaces to keep them short**.

Examples of rodents
- Rats
- Porcupines
- Guinea pigs
- Squirrels
- Mice
- Hare

NB. Porcupines have spines for protection.

- *Gnawing mammals have two pairs of well developed incisor teeth.*
- *Gnawing mammals undergo multiple ovulation. This enables them to give birth to many young ones.*

ACTIVITY

1. Why is a squirrel known as a gnawing mammal?

   ....

2. Why do some animals give birth to many young ones at once?

   ....

3. Give one effect of squirrels and rats to a crop farmer.

   ....

E. Insectivores (insect eating mammals)

- These are mammals which feed on insects.

Characteristics of insect eating mammals
- They have a high sense of smell.
- They have strong claws for digging the ground to get food.
- They mostly hunt at night. (nocturnal)
- Have sticky tongues for catching insects.
- Have long snouts.

Examples of insect eating mammals
- hedgehog,
- moles
- ant bears

NB A hedgehog has spines on its body for protection.

ACTIVITY

1. How is an ant bear adapted to eating insects?
   ....
2. What does a hedgehog use to protect itself?
   ....
3. How is a hedgehog and a porcupine similar in their way of protection?
   ....

F. Chiroptera (flying mammals)
- They are mammals that move by flying.

Characteristics of flying mammals
- Their fore limbs are modified into wings.
- They are nocturnal.
- They can find their food at night using echoes.
- They give birth to live young ones.
- Have mammary glands.

NB: Bats are the major examples of flying mammals.
- Bats are different from other mammals because they move by flying.
- Moths, hedgehogs are other examples of nocturnal animals.
- Nocturnal are dormant animals which are dormant during day and active   during night.
- An echo is a reflected sound

Importance of echoes to bats
- Helps them to locate food at night
- Helps them to find their way at night

Types of bats
a) Fruit eating bats; feed on fruit
b) Insect eating bats; feed on insects
c) Blood sucking bats; feed on blood (vampire bats)

ACTIVITY

1. What are nocturnal animals?

   ....

2. How do bats reproduce?

   ....

3. How are echoes important to bats?

   ....

4. Why a bat is called a nocturnal?

   ....

5. Apart from a bat, name any other two examples of nocturnal animals.

   ....

6. How are bats different from other mammals?

....

....

NB: What you have finished is a **small part** of the material that compose a **whole book**. In case you are **interested** in the complete set of this book, contact; **0772 511 120/ 0705 283 741**