**BIOLOGY SCHEMES OF WORK**

**FORM THREE 2013**

**TERM I**

**TOPICS:**

**CLASSIFICATION II**

**ECOLOGY**

**REPRODUCTION**

**REFERENCES:**

1. KLB Secondary Biology Form 3 Students Book KLB BK 3
2. Longhorn Biology Book 3
3. Principles of Biology Vol 2 (POB VOL 2)

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| **WK** | **LSN** | **TOPIC/S-TOPIC** | **OBJECTIVES** | **L/ACTIVITIES** | **L/T AIDS** | **REFERENCE** | **REMARKS** |
| 1 | 1-5 | **SCHOOL REOPENS**  **CAT 1 SERIES** | | | | |  |
| 2 | 1&2 | Classification II  Introduction  Kingdoms  Monera  Protista | **By the end of the lesson the learner should be able to:-**  State principles of Binomial nomenclature  State general characteristics of kingdom monera and protista | Discussion  Note taking  Observing permanent slides  Drawing | Preserved slides of amoeba and bacteria  Microscope  Pond water  slides | KLB Pg 1-5  POB VOL 2 Pg 1-4  Teacher’s guide  Pg 48-50 |  |
|  | 3&4 | Kingdom Fungi | **By the end of the lesson the learner should be able to:-**  State general characteristics of fungi  Draw and name the rhizopus | Discussion  Note taking  Observing specimens  Drawing | Microscope  Bread with moulds | KLB Pg 6  POB VOL 2 Pg 4  Longhorn Pg 9-14 |  |
|  | 5 | Economic importance of monera, protista and fungi | **By the end of the lesson the learner should be able to:-**  State importance of named kingdoms | Discussion  Note taking | Chalkboard  Lesson notes | KLB Pg 7-8  POB VOL 2 Pg 4-8 |  |
| 3 | 1&2 | Kingdom plantae | **By the end of the lesson the learner should be able to:-**  Identify three divisions of plantae and their general characteristics | Discussion  Drawing  Observing plants | Microscopes  Moss plant  Fern plant  Frond | KLB Pg 7-8  POB VOL2 Pg15-17 |  |
|  | 3&4 | Division  Anglos permaphyta | **By the end of the lesson the learner should be able to:-**  State the differences between monocots and dicots | Discussion  Note taking  Observing statement | Bean plant  Monocot plant | KLB Pg 10-11  POB VOL 2 Pg |  |
|  | 5 | Kingdom Animalia | **By the end of the lesson the learner should be able to:-**  State general characteristics of animals  Identify phyla in animalia | Discussion | Chalkboard  Lesson notes | KLB Pg 12  POB VOL 2 Pg 25 |  |
| 4 | 1&2 | Phylum Arthropoda | **By the end of the lesson the learner should be able to:-**  State distinguishing characteristics of arthropoda  State characteristics of various classes of arthropoda | Group discussion  Observing preserved specimens of arthropods | Arthropods e.g. locust, crab, millipede, spider, centipede or pictures | KLB Pg 13-15  POB VOL2 Pg25-26  Teacher’s guide  Pg 62-65 |  |
|  | 3&4 | Phylum Chordata  Class:  Pisces  Aves  Amphibian | **By the end of the lesson the learner should be able to:-**  State main characteristics of chordates  State characteristics of named classes in chordata | Discussion  Observing specimens | Preserved fresh specimen of fish, aves, amphibia | KLB Pg 16-17  POB VOL 2  Pg 32-33 |  |
|  | 5 | Class  Mammalian  Reptilia | **By the end of the lesson the learner should be able to:-**  State general characteristics of mammals and reptiles | Discussion  Observing specimens | Reptile specimen  Chalkboard | KLB Pg 18-21  POB VOL 2  Pg 34-37 |  |
| 5 | 1&2 | Dichotomous Key  Features to identify leaves | **By the end of the lesson the learner should be able to:-**  Distinguish between various plant leaves for the purpose of constructing the dichotomous key | Discussion  Observing leaves  Note taking | Leaf collection and branches  Pictures of leaves | KLB Pg 24-25  Teacher’s guide  Pg 69-70 |  |
|  | 3&4 | Features used to identify animals | **By the end of the lesson the learner should be able to:-**  Identify various features to distinguish animals | Discussion  Observing specimens | Specimens from different animal phyla or pictures | KLB Pg 27-28  POB VOL 2  Pg 41-42 |  |
|  | 5 | Rules for constructing dichotomous keys | **By the end of the lesson the learner should be able to:-**  Construct a dichotomous key applying rules given | Construction of dichotomous key (group work) | Pictures of leaves  Quiz sample | KLB Pg 23  POB VOL 2  Pg 40 |  |
| 6 | 1&2 | Using a constructed dichotomous key to identify organisms | **By the end of the lesson the learner should be able to:-**  Identify organisms correctly using a given dichotomous key | *© Education Plus Agencies*  Discussion  Answering questions | Constructed dichotomous keys  Quiz sample | KLB Pg 27-29  POB VOL 2  Pg 40-43 |  |
|  | 3&4 | Ecology  Introduction | **By the end of the lesson the learner should be able to:-**  Identify organisms correctly using a given dichotomous key | Discussion  Note taking | Chalkboard  Lesson notes | KLB Pg 33-34  POB VOL 2  Pg 48 |  |
|  | 5 | Abiotic Factors | **By the end of the lesson the learner should be able to:-**  State and explain abiotic factors in the ecosystem | Discussion  Note taking | Chalkboard  Various wealth instruments or pictures of the instrument | KLB Pg 34-36  Longhorn Pg 56-58 |  |
| 7 | 1&2 | Biotic factors in the ecosystem  Symbiosis  Predation | **By the end of the lesson the learner should be able to:-**  Identify the biotic factors  Describe how each factors affects distribution of organisms | Group discussion  Note taking  Presentation | Pictures e.g. of predation in progress in progress  Roots with nodules | KLB Pg 37-40  POB VOL 2  Pg 54-56  Longhorn Pg 54-60 |  |
|  | 3&4 | Competition parasitism | **By the end of the lesson the learner should be able to:-**  Describe how the two factors affect the distribution of organisms | Discussion  Note taking | Chalkboard  Flow chart | KLB Pg 37-40  POB VOL 2  Pg 69-96 |  |
|  | 5 | The Nitrogen Cycle  Introduction | **By the end of the lesson the learner should be able to:-**  Define the nitrogen cycle  Explain nitrification  Give examples of nitrifying bacteria | Discussion  Note taking | Chalkboard  Flowcharts | KLB Pg 40-41  POB VOL 2  Pg 69-96 |  |
| 8 | 1&2 | Nitrification  Nitrogen Cycle  Nitrogen Fixation | **By the end of the lesson the learner should be able to:-**  Describe the various types of nitrogen fixation  Give examples of nitrogen fixing bacteria | Discussion  Note taking | Chalkboard  Flowcharts | KLB Pg 43  POB VOL 2  Pg 72  Longhorn Pg 63-66 |  |
|  | 3&4 | The Nitrogen Cycle  Denitrification | **By the end of the lesson the learner should be able to:-**  Explain the priocess of denitrification  Give its advantages and disadvantages  Give examples of denitrifying bacteria | Discussion  Note taking | Chalkboard  Flowcharts | KLB Pg 41  POB VOL 2  Pg 70  Longhorn Pg 65-66 |  |
|  | 5 | Energy flow in the ecosystem | **By the end of the lesson the learner should be able to:-**  Describe the trophic levels and state how energy flows through them | Discussion  Note taking | Flowcharts showing trophic levels | KLB Pg 44-46  POB VOL 2  Pg 69 |  |
| 9 | 1&2 | Food chains and food webs | **By the end of the lesson the learner should be able to:-**  Identify and draw food chains and food webs in a given ecosystem | Group discussion  Construction of food chains/webs | Chalkboard  Sample questions | Longhorn Pg 60-71  KLB Pg 42-44  POB VOL 2  Pg 70 |  |
|  | 3&4 | Food chain and food webs | **By the end of the lesson the learner should be able to:-**  Construct pyramids of numbers and biomas from a given data  Describe the shape of the pyramid drawn giving reasons | Discussion  Construction of pyramids | Chalkboard  Pictures of pyramids | KLB Pg 44-46  POB VOL 2  Pg 71  Longhorn Pg 71-73 |  |
|  | 5 | Population Estimation  Quadrat method | **By the end of the lesson the learner should be able to:-**  Describe how a quadrat can be used to estimate the number of organisms in a given ecosystem | Field experiment  Note taking | Quadrat  Metre rules | KLB Pg 46-47 |  |
| 10 | 1&2 | Line and belt transect  Capture and recapture method | **By the end of the lesson the learner should be able to:-**  Calculate population of organisms using given data by capture and recapture method  State assumptions taken | Discussion  Note taking  Calculations  Question and answer | Chalkboard  Sample questions | KLB Pg 48  POB VOL 2  Pg 83-86  Longhorn Pg 73 |  |
|  | 3&4 | Adaptations of plants to various habitats  - Xerophytes | **By the end of the lesson the learner should be able to:-**  Name the habitat of xerophytes  State the characteristic of xerophytic habitats  State adaptations of xerophytes | Discussion  Note taking | Cactus plant  Pictures of xerophytes | KLB Pg 50  POB VOL 2  Pg 60-65 |  |
|  | 5 | Adaptations of mesophytes | **By the end of the lesson the learner should be able to:-**  State characteristics of mesophytic habitats  State adaptations of mesophytes | Group discussion  Note taking | Chalkboard  Mesophytic plants | KLB Pg 51  POB VOL 2  Pg 60-62 |  |
| 11 | 1&2 | Halophytes | **By the end of the lesson the learner should be able to:-**  State characteristics of halophytes, aquatic environment  State adaptations of halophytes | Observing both floating and submerged plants  Discussion | Water plant  Chalkboard | KLB Pg 53-54  POB VOL 2  Pg 63-65  Longhorn Pg 64-65 |  |
|  | 3&4 | Effects of pollution on living things  Air pollution | **By the end of the lesson the learner should be able to:-**  State causes of air pollution, sources and control measures | Discussion  Note taking | Newspapers, Extract on effects of pollution  Pictures showing pollution in progress | KLB Pg 55-59  POB VOL 2  Pg 100-101  Longhorn Pg 86-90 |  |
|  | 5 | Water pollution | **By the end of the lesson the learner should be able to:-**  State causes of water pollution and control measures | Discussion | Pictures  Newspapers  Extracts | KLB Pg 60-62  POB VOL 2  Pg 105-108 |  |
| 12 | 1&2 | Soil pollution | **By the end of the lesson the learner should be able to:-**  Describe causes, sources and control measures of soil pollution | Discussion | Pictures e.g. heaped rubbish | KLB Pg 62-63  POB VOL 2  Pg 109-112 |  |
|  | 3&4 | Radioactive Emissions | **By the end of the lesson the learner should be able to:-**  State effect of radiation on living things | Discussion  Question and answer | Chalkboard  Pictures of people with disorders related | KLB Pg 64  Longhorn Pg 110 |  |
|  | 5 | Human diseases  Bacterial | **By the end of the lesson the learner should be able to:-**  Describe two bacterial diseases, causes, effects, prevention and transmission | Discussion  Question answer | Pictures of bacteria  Lesson notes | KLB Pg 65-66  Longhorn Pg 111 |  |
| 16 |  | **EXAMINATION AND MARKING** | | | | |  |
| 17 |  | **PREPARATION OF RESULTS**  **CLOSING OF SCHOOL** | | | | |  |

**BIOLOGY SCHEMES OF WORK**

**FORM THREE 2012**

**TERM II**

**TOPICS:**

**REPRODUCTION**

**GROWTH AND DEVELOPMENT**

**REFERENCES:**

1. KLB Secondary Biology Form 3 Students Book KLB BK 3
2. Longhorn Biology Book 3
3. Principles of Biology Vol 2 (POB VOL 2)
4. Get it Right

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| **WK** | **LSN** | **TOPIC/S-TOPIC** | **OBJECTIVES** | **L/ACTIVITIES** | **L/T AIDS** | **REFERENCE** | **REMARKS** |
|  |  | **SCHOOL REOPENS** | | | | |  |

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| 1 | 1&2 | Mitosis  Metaphase  Anaphase  Telophase | **By the end of the lesson the learner should be able to:-**  Describe behaviour of chromosomes during the three stages | Discussion  Note taking  Drawing | Diagram of chromosomes various stages  Sample questions | KLB Pg 81-84  POB VOL 2 Pg 144  Teacher’s guide  Pg 117-119 |  |
|  | 3&4 | Meiosis II | **By the end of the lesson the learner should be able to:-**  Describe behaviour of chromosomes during meiosis | Discussion  Note taking  Question answer | Sample questions  Charts of contrast | KLB Pg 84  POB VOL 2  Pg 144 |  |
|  | 5 | Meiosis II | **By the end of the lesson the learner should be able to:-**  Describe chromosome behaviour during the five stages at meiosis | Discussion  Question answer | Sample questions  Charts of contrast | KLB Pg 82, 86  Longhorn  Pg 117-122 |  |
| 2 | 1&2 | Importance of meiosis and mitosis  Differences between meiosis and mitosis | **By the end of the lesson the learner should be able to:-**  State differences and significance of meiosis and mitosis | Discussion  Question answer | Sample questions  Charts of contrast | KLB Pg 82, 86  Longhorn  Pg 117-122 |  |
|  | 3&4 | Asexual reproduction  Binary fission | **By the end of the lesson the learner should be able to:-**  Identify types of asexual reproduction  Describe binary fission in amoeba | Discussion  Drawing  Question answer | Diagram of amoeba dividing | KLB Pg 87-88  POB VOL 2  Pg 145-147 |  |
|  | 5 | Budding in yeast | **By the end of the lesson the learner should be able to:-**  Describe budding in yeast | Observing budding in yeast cells | Microscope  Yeast suspension | KLB Pg 89-90  Longhorn  Pg 125-129 |  |
| 3 | 1&2 | Sporulation in rhizopus | **By the end of the lesson the learner should be able to:-**  Describe spore formation in rhizopus  Draw and label the rhizopus | Discussion  Observing bread mould  Drawing | Microscope  Fern frond  Bread mould | KLB Pg 88-89  POB VOL 2 Pg 146  LonghornPg126-128 |  |
|  | 3&4 | Sexual reproduction in plants  Structure and function of the flower | **By the end of the lesson the learner should be able to:-**  Describe the structure and function of the flower  Describe the flower | Discussion  Observing sample of collected flower  Drawing | Flower | KLB Pg 89-90 |  |
|  | 5 | Pollination | **By the end of the lesson the learner should be able to:-**  Define the term pollination  Describe the types of pollination | Discussion group  Note taking | Chart showing the type of pollination | KLB Pg 93  POB VOL 2  Pg 135 |  |

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| 4 | 1&2 | Adaptation of flowers to pollination  Insect  Wind | **By the end of the lesson the learner should be able to:-**  State adaptations of wind and insect pollinated flowers | Discussion  Drawing | Flowers | KLB BK 2 Pg 94  Longhorn BK 2  Pg 129-131 |  |
|  | 3&4 | Factors that encounter cross pollination | **By the end of the lesson the learner should be able to:-**  State the factors that encounter cross pollination  State the differences between wind and insect pollinated plants | Discussion  Note taking | Chart  Chalkboard | KLB BK 2 Pg 95  Longhorn BK 2  Pg 132 |  |
|  | 5 | Process of fertilization | **By the end of the lesson the learner should be able to:-**  Describe the process of fertilization in flowering plants | Discussion  Note taking  Drawing | Chart  Chalkboard | KLB BK 2 Pg 96 |  |
| 5 | 1&2 | Changes in the flower after fertilization | **By the end of the lesson the learner should be able to:-**  State the changes in the flower after fertilization | Discussion  Note taking | Lesson notes  Chalkboard | KLB BK 2 Pg 95  POB VOL 2 Pg 161 |  |
|  | 3&4 | Seed and fruit development | **By the end of the lesson the learner should be able to:-**  Describe the development of a seed  Describe the development of a fruit | Discussion in groups  Note taking  Observing fruits and seeds | Lesson notes  Chalkboard  Chart  Seeds, Fruits | KLB BK 2 Pg 97  POB VOL 2 Pg 161 |  |
|  | 5 | Differences between seed and fruits  Classification of fruits | **By the end of the lesson the learner should be able to:-**  State the differences between the seed and fruit  Classify fruits | Discussion  Note taking | Chalk and board | KLB BK 2 Pg 98-99  POB VOL 2 Pg 162 |  |
| 6 | 1&2 | Placentation  Types | **By the end of the lesson the learner should be able to:-**  Describe the various types of placentations | Discussion  Note taking  Drawing | Containers  Petri dishes  Blades/scapels  Hacksaw | KLB BK 2 Pg 101  Get it Right Pg |  |
|  | 3&4 | Fruit and seed dispersal | **By the end of the lesson the learner should be able to:-**  State the importance of seed dispersal | Discussion  Note taking  Drawing | Seeds  Jacaranda, Nandi flame, tridax, cotton, tecomo seed | KLB BK 2  Pg 102-103  Get it Right Pg |  |
|  | 5 | Adaptations of fruits and seed dispersal to wind | **By the end of the lesson the learner should be able to:-**  State the adaptations of fruit and seed dispersal to wind | Discussion  Note taking  Drawing | Argemon  Wicotina species | KLB BK 2  Pg 103  Get it Right Pg |  |
| 7 | 1&2 | Adaptations of fruits and seed dispersal to animal dispersal | **By the end of the lesson the learner should be able to:-**  State the adaptation of fruit and seed to animal dispersal | Discussion  Note taking | Chalk and board | KLB BK 2  Pg 103  Longhorn Pg |  |
|  | 3&4 | Self dispersal mechanism | **By the end of the lesson the learner should be able to:-**  Describe the adaptation of fruits to explosive mechanism | Discussion  Note taking | Chalk and board | KLB BK 2  Pg 103-104  POB VOL 2 Pg 171 |  |
|  | 5 | Sexual reproduction in animals  External fertilization in amphibians | **By the end of the lesson the learner should be able to:-**  Describe the external fertilization in amphibians | Discussion in groups | Chalk and board  Charts showing amphibians | KLB BK 2  Pg 104-105  POB VOL 2 Pg |  |
| 8 | 1&2 | Internal fertilization in  Reptiles  Birds  Mammals | **By the end of the lesson the learner should be able to:-**  Describe internal fertilization in reptiles, birds, mammals  State the differences between internal and external fertilization | Discussion  Note taking  Observing specimens of reptiles, birds and mammals | Charts of reptiles  Specimens on reptiles, birds and mammals | KLB BK 2  Pg 105-106  POB VOL 2 Pg 165 |  |
|  | 3&4 | Reproduction in human beings  Male reproductive system | **By the end of the lesson the learner should be able to:-**  State various parts of the male reproductive system and state its functions  State the adaptation of the various parts to its function | Drawing  Observing charts showing male reproductive system  Note taking | Chalk and board  Charts showing male reproductive system | KLB BK 2  Pg 105-107  POB VOL 2 Pg 166 |  |
|  | 5 | Female reproductive system | **By the end of the lesson the learner should be able to:-**  State and give functions of various parts of the female reproductive system | Drawing  Observing specimen of reproductive system  Note taking | Charts showing female reproductive system  Chalk and board | KLB BK 2  Pg 108  POB VOL 2 Pg 167 |  |
| 9 | 1&2 | Fertilization  Structure of gametes  Human sperms  Human ovum | **By the end of the lesson the learner should be able to:-**  Define fertilization  Describe structure of human sperm and human ovum | Discussion in groups  Drawing  Observing charts of human ovum/sperm | Chalk and board  Chart | KLB BK 2  Pg 111  POB VOL 2 Pg 167 |  |
|  | 3&4 | Process of Fertilization | **By the end of the lesson the learner should be able to:-**  Describe the process of fertilization in human beings | Discussion  Drawing  Charts showing the process of fertilization | Chalk and board  Charts showing the process of fertilization in plants | KLB BK 2  Pg 111-113  POB VOL 2 Pg 173 |  |
|  | 5 | Implantation  Formation of Placenta | **By the end of the lesson the learner should be able to:-**  State the functions of the placenta  State the substances that passes through the placenta & those that don’t | Discussion  Note taking | Chalk and board | KLB BK 2  Pg 114-115  POB VOL 2 Pg 174 |  |
| 10 | 1&2 | Gestation Period | **By the end of the lesson the learner should be able to:-**  State gestation period for various animals | Discussion  Note taking | Table showing gestation period for various animals | KLB BK 2  Pg 116  POB VOL 2 Pg 174 |  |
|  | 3&4 | Birth (Parturition)  Abortion | **By the end of the lesson the learner should be able to:-**  Define the term birth  Define abortion  Describe the process of abortion and what cause it | Discussion  Note taking | Chalk and board | KLB BK 2  Pg 117-119  POB VOL 2 Pg 177 |  |
|  | 5 | Role of Hormones in Human Sexual Characteristics | **By the end of the lesson the learner should be able to:-**  Identify the hormones that are responsible for sexual characteristics  State the role of the hormones | Discussion  Note taking | Chalk and board | KLB BK 2  Pg 120-122  POB VOL 2 Pg 178 |  |
| 11 | 1&2 | Sexual transmitted diseases  Gonorrhea  Syphilis  Herpes | **By the end of the lesson the learner should be able to:-**  State the S.T.Ds  State the causes and control of the S.T.Ds identified | Discussion  Note taking | Chalk and board  Chart showing people suffering from S.T.Ds | KLB BK 2  Pg 123-127  POB VOL 2 Pg 179 |  |
|  | 3&4 | Sexual transmitted diseases  Trichomoniasis  Cardidiasis  Hepatitis  HIV and Aids | **By the end of the lesson the learner should be able to:-**  State the S.T.Ds  State the cause and control of the S.T.Ds identified | Discussion  Note taking | Chalk and board  Charts showing people suffering from S.T.Ds | KLB BK 2  Pg 123  POB VOL 2 Pg 179 |  |
|  | 5 | Disadvantages of sexual reproduction | **By the end of the lesson the learner should be able to:-**  State the disadvantages of sexual reproduction | Discussion  Note taking | Chalk and board | KLB BK 2  Pg 127-128  POB VOL 2 Pg 180 |  |
| 12 | 1&2 | Growth and development  Definition of growth and development | **By the end of the lesson the learner should be able to:-**  Define growth and development | Discussion  Note taking  Question answer | Chalk and board | KLB BK 2  Pg 132  POB VOL 2 Pg 186 |  |
|  | 3&4 | Growth and development in animals | **By the end of the lesson the learner should be able to:-**  Describe growth and development in animals | Discussion  Note taking  Question answer | Chalk and board | KLB BK 2  Pg 132  POB VOL 2  Pg 186-187 |  |
|  | 5 | Measurement of growth | **By the end of the lesson the learner should be able to:-**  Plot the S-shaped curve  Describe the phases of the curve drawn | Discussion  Note taking  Question answer | Chalk and board  Ruler | KLB BK 2  Pg 132  POB VOL 2  Pg 187-188 |  |
| 13 |  | **EXAMINATION AND MARKING** | | | | |  |
| 14 |  | **PREPARATION OF REPORT BOOKS**  **CLOSING OF SCHOOL** | | | | |  |

**BIOLOGY SCHEMES OF WORK**

**FORM THREE 2012**

**TERM III**

**TOPICS:**

**GROWTH AND DEVELOPMENT**

**REFERENCES:**

1. KLB Secondary Biology Form 3 Students Book KLB BK 3
2. Get it Right
3. Principles of Biology Vol 2 (POB VOL 2)

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| WK | LSN | TOPIC/S-TOPIC | **OBJECTIVES** | L/ACTIVITIES | L/T AIDS | REFERENCE | REMARKS |
|  |  | **SCHOOL OPENING** | | | | |  |
| 1 | 1&2 | Intermittent growth curve in arthropods | **By the end of the lesson the learner should be able to:-**  Describe the intermittent growth curve  Define the term insten | Discussion  Note taking  Drawing of curves on chalkboard | Chalk and board | KLB BK 2  Pg 135  POB VOL 2 Pg 188 |  |
|  | 3&4 | Intermittent growth curve and sigmoid curve (normal) | **By the end of the lesson the learner should be able to:-**  Draw the sigmoid and intermittent growth curve | Drawing | Chalk and board | KLB BK 2  Pg 135  POB VOL 2 Pg 188 |  |
|  | 5 | Phases of sigmoid growth curve | **By the end of the lesson the learner should be able to:-**  State and describe the various phases of sigmoid growth curve | Discussion  Drawing | Chalk and board  Lesson notes | KLB BK 2  Pg 133  POB VOL 2 Pg |  |

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| 2 | 1&2 | Examples of  Measurements and  Growth  - Using length of leaf | **By the end of the lesson, the learner**  **should be able to:-**  Calculate the measurement of growth  using length of a leaf | Discussion  Notes taking  Drawing | Thread  Leaves  Chalk and board | KLB Pg 145  POB VOL 2  Pg 196 |  |
|  | 3&4 | Using area of leaf  Using radicle/  Determination of  growth regions | **By the end of the lesson, the learner**  **should be able to:-**  Calculate the measurement of growth  using area of leaf and radicle | Discussion  Drawing | Chalk and board  Radicle | KLB Pg 140 |  |
|  | 5 | Growth and  Development in plants | **By the end of the lesson, the learner**  **should be able to:-**  Discuss growth and development in  Plants | Discussion  Notes taking | Chalk and board | KLB Pg 135  POB VOL 2  Pg 190 |  |
| 3 | 1&2 | Structure of a seed and  changes that occur  during germination | **By the end of the lesson, the learner**  **should be able to:-**  - Describe the structure of a seed  - State the changes that occur during  germination | Discussion  Notes taking | Chalk and board | KLB Pg 136  POB VOL 2  Pg 190  Get it Right Pg 232 |  |
|  | 3&4 | Conditions necessary  for germination  - Hormones  - Water  - Viability of seeds  - Moisture  - Air/Oxygen  - Temperature  - Enzymes | **By the end of the lesson, the learner**  **should be able to:-**  State the conditions that are necessary  for germination to take place | Discussion  Notes taking | Chalk and board | KLB Pg 138  POB VOL 2  Pg 192  Get it Right Pg 233 |  |
|  | 5 | Types of germinations  - Apigeal germination | **By the end of the lesson, the learner**  **should be able to:-**  Describe the epigeal types of  germination | Drawing  Discussion  Notes taking | Chalk and board,  Flow chart  Beans and maize seeds | KLB Pg 139  POB VOL 2  Pg 193 |  |
| 4 | 1&2 | Hypogeal Germination | **By the end of the lesson, the learner**  **should be able to:-**  Describe the hypogeal type of  germination | Drawing  Discussion  Notes taking | Maize seedling  Chalk and board | KLB Pg 141  POB VOL 2  Pg 191  Get it Right Pg 232 |  |
|  | 3&4 | Dormancy in seeds  - Factors that cause  seed dormancy in  seeds | **By the end of the lesson, the learner**  **should be able to:-**  - Define dormancy in seeds  - State the factors that causes seed  Dormancy in seeds | Discussion  Notes taking | Chalk and board  Sample questions | KLB Pg 137  Get it Right Pg 231 |  |
|  | 5 | Ways of breaking seed  dormancy | **By the end of the lesson, the learner**  **should be able to:-**  State and describe the ways of breaking  Seed dormancy | Discussion  Notes taking | Chalk and board  Sample questions | KLB Pg 137  Get it Right Pg 231 |  |
| 5 | 1&2 | Types of growth in  Plants  - Primary growth | **By the end of the lesson, the learner**  **should be able to state:-**  - Regions of cell division  - Regions of growth in root  - State what results to primary growth | Drawing  Discussion  Notes taking | Chart  Plants with shoots and  roots | KLB Pg 142  POB VOL 2  Pg 193 |  |
|  | 3&4 | Secondary growth | **By the end of the lesson, the learner**  **should be able to:-**  - State what results to secondary growth  - Draw how secondary growth has  occurred  - Describe secondary growth | Drawing  Discussion  Notes taking | Tree stems  Chart  Chalk and board | KLB Pg 144-146 |  |
|  | 5 | Secondary growth | **By the end of the lesson, the learner**  **should be able to:-**  - Draw the section through a lenticel  - Draw and show the annual rings | Drawing  Discussion  Notes taking | Tree stems  Chart  Chalk and board | KLB Pg 144-146 |  |
| 6 | 1&2 | Role of hormones in  Plants growth and  development  - Auxins | **By the end of the lesson, the learner**  **should be able to:-**  - State the role of hormones in plants  - State one well known auxin  - Role of auxins | Discussion  Notes taking | Chalk and board  Sample questions | KLB Pg 146-147 |  |
|  | 3&4 | Gibberellins  Cytokinins/kinetins | **By the end of the lesson, the learner**  **should be able to:-**  State the importance of gibberellins,  cytokinins and kinetins to plants | Discussion  Notes taking | Chalk and board  Sample questions | KLB Pg 146-147 |  |
|  | 5 | Ethylene/Ethene  Abscisic Acid (ABA)  Florigen | **By the end of the lesson, the learner**  **should be able to:-**  State the importance of ethane,  abscisic acid and florigen | Discussion  Notes taking | Chalk and board  Sample questions | KLB Pg 146-147 |  |
| 7 | 1&2 | Apical dominance | **By the end of the lesson, the learner**  **should be able to:-**  Define apical dominance | Discussion  Notes taking | Chalk and board  Sample questions and  answers | KLB Pg 147-148  POB VOL 2  Pg 198 |  |
|  | 3&4 | Growth and  Development in insects  - Life history of insects  - Complete  metamorphosis | **By the end of the lesson, the learner**  **should be able to:-**  - Describe the development of a house  fly  - Define complete and incomplete  Metamorphosis | Discussion  Notes taking | Chalk and board  Sample questions | KLB Pg 146-147 |  |
|  | 5 | Incomplete  Metamorphosis | **By the end of the lesson, the learner**  **should be able to:-**  - Describe the life cycle of a housefly  - Describe the development in a  Cockroach | Drawing  Notes taking | Chalk and board  Sample questions | KLB Pg 149 |  |
| 8 | 1&2 | Role of hormones in  insects metamorphosis | **By the end of the lesson, the learner**  **should be able to:-**  State role of juvenile hormone, moult  stimulating hormone and moulting  hormone | Discussion  Notes taking | Chalk and board  Sample questions | KLB Pg 150 |  |
|  | 3&4 | Revision  Growth and  Development | **By the end of the lesson, the learner**  **should be able to:-**  Answer all questions on growth and  development page 151-152, questions  1,2 and 3,5,6 and 7 | Discussion  Notes taking  Drawing  Answering questions | Chalk and board  Sample questions | KLB Pg 151-152 |  |
|  | 5 | Revision  Growth and  Development | **By the end of the lesson, the learner**  **should be able to:-**  Answer the questions on page 152-155  questions 8-15 | Group discussion | Chalk and board | KLB Pg 152-155 |  |
| 9 |  | **EXAMINATIONS AND MARKING** | | | | |  |
| 10 |  | **PREPARATION OF REPORT BOOKS**  **AND CLOSING SCHOOL** | | | | |  |