SCHEME OF WORK BIOLOGY

FORM 3 2022 TERM I

ENDARASHA BOYS

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| **2** | 1 | CLASSIFICATION II | Principles of classification of living organisms.  Binomial Nomenclature. | By the end of the lesson, the learner should be able to:  Explain the importance of classification of organisms.  Discuss the general principles of classification.  Identify major taxonomic units. To define a species.  To explain features of a species.  To explain principles of binomial nomenclature. | Q/A: To review Classification I. Discussion of principles of classification of organisms.  Q/A: Major taxonomic units.  Probing questions leading to definition of a species.  Give examples of breeds and varieties. Discuss the double- naming system and the underlying features. | Chart- Taxonomic units.  Chart- Examples of generic and specific names of organisms. | KLB BK III. PP 1-2. |  |
| 2 | CLASSIFICATION II | Animal Kingdoms. Kingdom Monera. | By the end of the lesson, the learner should be able to: Identify the five animal kingdoms.  State characteristics of members of kingdom Monera.  To identify and draw various bacteria.  To explain how bacteria affect our lives. | Expository approach - The teacher will expose the five kingdoms.  Discussion- General characteristics of unicellular and microscopic organisms.  Drawing and labeling a bacterium.  Q/A: Economic importance of bacteria. | Chart- Types of bacteria | KLB BK III.P 3. |  |
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| 3-4 | CLASSIFICATION II | Kingdom Protoctista. Organisms with varied forms. | By the end of the lesson, the learner should be able to:  To give examples of members of kingdom Protoctista.  To state general characteristics of members of kingdom Protoctista.  To draw and label an amoeba, paramecium, spirogyra, e.t.c. | Teacher leads in a discussion.  Drawing and labelling organisms with varied forms. | chart  Wall charts. | KLB BK III. PP 4-5.  KLB BK III. P 4-5. |  |
| 5 | CLASSIFICATION II | Organisms in pond water. | By the end of the lesson, the learner should be able to:  To identify organisms in pond water. | Examine a drop of pond water on a glass slide under a microscope.  Draw diagrams of organisms observed. Compare the observed organisms with those previously drawn and labelled. | Microscope Water dropper Pond water Glass slides. | KLB BK III. P. 4-5. |  |
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| **3** | 1 | CLASSIFICATION II | Kingdom Fungi. Characteristics of Kingdom Fungi. | By the end of the lesson, the learner should be able to:  To give examples of members of kingdom fungi.  To discuss economic importance of fungi. To state general characteristics of fungi. | Detailed discussion. Exposition of new concepts/ terms. | Mushrooms, Yeast,  Bread mould. | KLB BK III. P 6. |  |
| 2 | CLASSIFICATION II | Diagrams of Fungi. | By the end of the lesson, the learner should be able to: To draw and label various fungi. | Examine bread mould. Draw and label diagrams of various fngi. | Wall charts, Bread mould, Yeast,  Edible mushroom. | KLB BK III. P 6. |  |
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| 3-4 | CLASSIFICATION II | Kingdom Plantae. General characteristics.  Division Bryophyta External structure of a Bryophyta. | By the end of the lesson, the learner should be able to: State general characteristics of plants.  State general characteristics of Bryophyta.  To draw and label external features of an identified Bryophyta. To identify features of Bryophyta. | Q/A: Compare plants with the aforementioned kingdoms, and then list down characteristics of plants.  Teacher leads in a discussion. Students examine moss plant under a hand lens, then Draw and label the moss plant. | Moss plant, Hand lens, Slide. | KLB BK III. P 7. |  |
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|  | 5 | CLASSIFICATION II | Division Pteridophyta. | By the end of the lesson, the learner should be able to: To state general characteristics of Pteridophytes.  To draw and label external features of Pteridophytes. | Teacher leads in a discussion on characteristics of Pteridophytes.  Class experiments: To observe a live or preserved fern.  To draw and label the fern. | A live or preserved fern. | KLB BK III. P 7. |  |
| **4** | 1 | CLASSIFICATION II | Division Spermatophyta. Features of Spermatophytes. | By the end of the lesson, the learner should be able to: To state general characteristics of spermatophytes.  To identify features of spermatophytes. | Teacher leads in a discussion on spermatophytes. Class experiments: To examine a complete specimen of a bean plant with ponds/ maize plant/ a twig of cypress. | text book Complete specimens of bean plant with ponds/ maize plant/ a twig of cypress. | KLB BK III. P 9. |  |
| 2 | CLASSIFICATION II | Sub-division Gymnospermatophyta. | By the end of the lesson, the learner should be able to: To state general characteristics of  gymnospermatophyta. | Detailed discussion. | text book | KLB BK III. P 9. |  |
| 3-4 | CLASSIFICATION II | Subdivision Angiospermaphyta. Class Monocotyledonae. Class Dicotyledonae. | By the end of the lesson, the learner should be able to: To state general characteristics of angiospermaphyta. To list down characteristics of Monocotyledonae. To list down characteristics of Dicotyledonae. | Detailed discussion. Q/A: Comparing gymnospermatophyta and angiospermaphyta. Class experiments: Examine maize plant/ wheat/ grass/ sugarcane.  Discuss external features of the plants. Class experiments: Examine external features of bean plant/ black jack/ tea.  Discuss their external features. | text book Maize plant/ wheat/ grass/ sugarcane.  Bean plant/ black jack/ tea. | KLB BK III. P 10. KLB BK III. P 11. |  |
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|  | 5 | CLASSIFICATION II | Kingdom Animalia. Phyllum Arthropoda. | By the end of the lesson, the learner should be able to:  To state characteristics of kingdom Animalia. To state general characteristics of Arthropoda. | Q/A: To review general characteristics of animals as compared to those of plants.  Q/A: General characteristics of Arthropoda. | text book | KLB BK III. P 12. |  |
| **5** | MID TERM EXAMS AND BREAK | | | | | | | |
| **6** | 1 | CLASSIFICATION II | Class Crustacea. | By the end of the lesson, the learner should be able to:  To list down external features of a crab/ crayfish. | Examine preserved specimens of a crab/ crayfish and identify external features.  Draw and label diagrams.  Discuss their general characteristics. | Specimens of a crab/ crayfish. | KLB BK III. P 13. |  |
| 2 | CLASSIFICATION II | Class Chilopoda. Class Diplopoda. | By the end of the lesson, the learner should be able to:  To describe external features of a centipede. To describe external features of a milipede. | Examine a centipede. Draw and label a centipede.  Discuss general characteristics of Chilopoda comparing them to those of other members of the kingdom Animalia.  Examine a milipede. Draw and label a milipede.  Discuss general characteristics of diplopoda comparing them to those of other members of the kingdom Animalia. | A centipede. A milipede. | KLB BK III. P 14. |  |
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|  | 3-4 | CLASSIFICATION II | Class Arachnida. Class Insecta.  Phyllum Chordata. | By the end of the lesson, the learner should be able to: To describe external features of mites, spiders, scorpions, ticks.  To describe external features of common insects.  To identify general characteristics of chordates. | Examine specimens of freshly killed/ preserved arachnids.  Q/A: Differences between arachnids and members of other classes.  Discuss general characteristics of Arachnida.  Examine live/ freshly killed specimens of ground beetle, honeybee, termite, e.t.c.  List down general characteristics of insecta.  Discuss economic importance of insects. Q/A: Identify classes of phylum chordata. Discussion: characteristics of chordates. | Specimens of freshly killed/ preserved arachnids.  Live/ freshly killed specimens of ground beetle, honey-bee, termite, e.t.c. | KLB BK III. P 15. KLB BK III. PP 16-18. |  |
| 5 | CLASSIFICATION II | Class Pisces. | By the end of the lesson, the learner should be able to: To draw and label external features of a (tilapia) fish. | Exposition- Teacher exposes new concepts pertaining to characteristics of fish. | Chart ?tilapia fish. | KLB BK III. P 18. |  |
| **7** | 1 | CLASSIFICATION II | Class Amphibia. | By the end of the lesson, the learner should be able to:  To compare observable features of a tilapia fish and those of a frog. | Group experiments- Observing specimens and placing them in their respective classes. | Preserved specimens ? fish, amphibians. | KLB BK III. P 18. |  |
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|  | 2 | CLASSIFICATION II | Class Reptilia. Class Aves. | By the end of the lesson, the learner should be able to: To state general characteristics of reptilia.  To state general characteristics of aves. | Q/A: Comparing reptiles and amphibians/ aves Discussion: General characteristics of reptilia. | Chart- Diagrams of birds. | KLB BK III. P 18. |  |
| 3-4 | CLASSIFICATION II | Class Mammalia. Dichotomous key. | By the end of the lesson, the learner should be able to: To state general characteristics of Mammalia.  To explain the rules used in constructing a dichotomous key. | Q/A: Examples of egg laying mammals, pouched mammals, primates, etc.  Teacher exposes features of a dichotomous key. | Diagrams of various mammals. | KLB BK III. P 20. KLB BK III. P 23. |  |
| 5 | CLASSIFICATION II | Features for identifying animals / plants.  Examples of dichotomous keys. | By the end of the lesson, the learner should be able to: To list identification features for animals/ plants.  To construct dichotomous keys using leaves, stems, e.t.c. | Teacher exposes features for identifying animals/ plants.  Teacher leads through constructed dichotomous keys. | Chart- Constructed dichotomous keys. | KLB BK III. P 24. |  |
| **8** | 1 | CLASSIFICATION II | Construction of dichotomous keys. | By the end of the lesson, the learner should be able to:  To construct a guided dichotomous key of a given number of steps. To use a constructed dichotomous key to identify given specimens.  To construct own dichotomous key. | Supervised exercise. Written exercise.  Exercise review. | Plants from different families.  Different plant species. | KLB BK III. PP 24-30 |  |
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| 2 | ECOLOGY | Concepts of ecology. | By the end of the lesson, the learner should be able to:  To differentiate between autecology and synecology.  Define various concepts used in ecology. | Exposition- Teacher exposes new concepts and explains their underlying meanings. | text book | KLB BK III. P 33 |  |
| 3-4 | ECOLOGY | Abiotic factors in an ecosystem. | By the end of the lesson, the learner should be able to: To describe various abiotic factors that affect distribution of organisms. | Detailed discussion of effect of light, temperature, pressure, wind, humidity, salinity, pH on distribution of organisms. | text book | KLB BK III. P 34. |  |
| 5 | ECOLOGY | Measuring abiotic factors. | By the end of the lesson, the learner should be able to: To measure abiotic factors that affect distribution of organisms. | Group activities- Measuring temperature, humidity, pH.  Answering related questions. | Thermometers pH meter e.t.c. | KLB BK III. P 34. |  |
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| **9** | 1 | ECOLOGY | Biotic inter- relationships. - Competition.  - Predation. | By the end of the lesson, the learner should be able to:  To differentiate between intraspecific and interspecific competition.  To interpret graphs representing competition between two species.  To define an ecological niche and a habitat.  To define a predator and a prey.  To describe adaptive characteristics of various predators. | Teacher exposes new concepts.  Teacher leads in interpreting graphs showing competition. Q/A: Deductions from graphs.  Q/A: Pairs of predators and preys.  Discussion: Adaptive characteristics of leopards, hawks, praying mantis, lions, e.t.c | Chart ? graphs. text book | KLB BK III. P 35. |  |
| 2 | ECOLOGY | * Parasitism. * Symbiosis and Saprophytism. | By the end of the lesson, the learner should be able to: To distinguish parasitism from predation.  To differentiate between endoparasites and ectoparasites.  To identify adaptive features of parasites. To define symbiosis and saprophytism.  To explain economic importance of symbiosis and saprophytism. | Q/A: Pairs of parasites and hosts.  Examine specimens of endoparasites and ectoparasites.  Discuss economic importance of parasites.  Detailed discussion. Examples of symbiants and saprophytic organisms. | Specimens of endoparasites and ectoparasites. text book | KLB BK III. P 37. |  |
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|  | 3-4 | ECOLOGY | The Nitrogen cycle. Trophic levels.  Food chains. | By the end of the lesson, the learner should be able to: Describe the nitrogen cycle.  Explain importance of micro-organisms in root nodules of plants.  To identify various trophic levels occupied by organisms.  To describe energy flow in an ecosystem. To define a food chain. To give examples of food chains.  To identify trophic levels of organism(s) in a food chain. | Discuss flow chart of nitrogen cycle.  Q/A: To review photosynthesis; carnivores, herbivores, Discuss trophic levels in an ecosystem.  Teacher gives an illustration of a food chain; then gives specific examples. Q/A: Trophic levels of organisms in a food chain. | Chart-Nitrogen cycle.  Flow chart- Energy flow in an ecosystem.  chart | KLB BK III. PP 40-41.  KLB BK III. PP 40-41. |  |
| 5 | ECOLOGY | Food webs. | By the end of the lesson, the learner should be able to:  To interpret food webs. | Teacher illustrates a food web in a given habitat.  Emphasis is laid on direction of arrows. Answer questions derived from food webs. | charts | KLB BK III. P 43. |  |
| **10** | END OF TERM EXAMS AND BREAK | | | | | | | |