**Year 11 Biology - Unit Two: Organisms and their Environment**

**Area of Study 1- Adaptations of Organisms**

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| Week | Key  Knowledge | Biozone | Text Reading and Questions | PowerPoints, DVDs and Notes |
| Holidays | Classification: purposes, principles, hierarchy of biological classification.  Features of major taxonomic groups | Student Manual 223-237 | Chapter 12 pp216-236 | *PowerPoint (Classification of Organisms)* |
| Holidays | Environmental Factors: biotic and abiotic.  Availability of Resources. | 236. Components of an Ecosystem.  237- 240. Physical Factors and Gradients. | Chapter 13, Pages 243-245  Questions 1 -2. Page 245 | PPT- Environmental Factors and Adaptations |
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| Term 3  Week 1  13th July- | Discuss homework  Structural Adaptations: relating major features of organisms to survival value.  Physiological Adaptations: tolerance range of organisms, maintaining equilibrium and responding to changes in environmental conditions. | 255-256. Animal Adaptations.  279-280. Adaptations of Xerophytes.  281. Mangrove Adaptations.  282. Adaptations of Hydrophytes.  283-284. Plant Adaptations to Fire. | Chapter 13, Pages 246-260  Questions 5-6. Page 251  Questions 8, 10. Page 258  Questions 12-13. Page 260 | Word Document - Camels and Adaptations |
| Term 3  Weeks  2-3  20th July | Behavioural Adaptations: individual and group behaviours of animals including rhythmic activities, feeding behaviours, communication, social and territorial behaviours. | 265-266. Animal Communication.  267-268. Breeding Behaviour.  274. Biological Rhythms.  275-276. Activity Patterns in Animals. |  | PPT-Animal Behaviour  PPT-Behaviour (Function)  Magpie and Kookaburra DVDs  Gorillas in the Mist DVD |
| Term 3  Week 4  3rd August | Nerve control in complex multicellular organisms. Major sense organs and pathways of transmission of nerve impulses.  Hormonal control in complex multicellular organisms. | 257-258. Nerves and Senses. | Chapter 15, Pages 279-284  Questions 3-5. Page 284 | PPT- Homeostasis (Hormones and Nerves)  PPT- Plant Animal Hormones |
| Term 3  Week 5  10th August | Regulating water balance and controlling temperature. | 259-260. Control of Body Temperature.  261. Thermoregulation in Mammals.  262. Water Budget in Mammals. |  | PPT- Homeostasis and Negative Feedback |
| Term 3  Week 6  17th August | Plant tropisms: growth responses, rhythmic activities. | 272. Investigating Phototropism.  273. Investigating Gravitropism. |  | PPT- Plant Hormones |
| Term 3  Week 7  24th August | Reproductive adaptations: systems and strategies, development and life cycles.  Techniques used to monitor environmental change and species distribution. | 199-200. Animal Reproductive Strategies.  201-202. Insect Life Cycles.  203. Mammalian Reproduction.  365-366. Ecosystem Stability. |  | PPT- Flowering Plants  PPT- Flower Structure |

**School Assessed Coursework**

**Area of Study One: Adaptations of Organisms**

***Outcome 1. Explain and analyse the relationship between environmental factors, and adaptations and distribution of living things.***

SAC ONE: Animal Behaviour Investigation.

SAC TWO: Practical Investigation: Plant Tropisms.

Topic Test

Text reading and questions

Biozone Worksheets

Practical Activities and demonstrations

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| Week | Key  Knowledge | Biozone | Text Reading and Questions | PowerPoints, DVDs and Notes |
| Term 3  Week 8  1st Sept | Components of Ecosystems: Communities of organisms, ecological groupings, ecological niche | 236. Components of an ecosystem.  250. Ecological Niche.  251-252. Dingo Habitats.  293. Dingo Food Webs. |  | Ecosystems |
| Term 3  Week 9  7th Sept | Relationships Between Organisms: parasite/host, predator/prey, mutualism.  Flow of Energy: inputs and outputs of an ecosystem, productivity, trophic levels and trophic efficiency | 304. Interspecific Competition.  305. Intraspecific Competition.  306. Predator-Prey Interactions.  295-296. Energy Flow in an Ecosystem.  299. Ecological Pyramids. |  | Parasites and Mutualism  Biological Control |
| Term 3  Week 10  14th Sept | Cycling of Matter: Water Cycle, Carbon Cycle, Oxygen Cycle, Nitrogen Cycle.  Bioaccumulation. | 308. The Water Cycle.  309-310. The Carbon Cycle.  311-312. The Nitrogen Cycle.  290. Pesticides and Biomagnification. |  | Bioaccumulation |
| Happy Holidays | Population Dynamics: Carrying capacity of ecosystems, factors affecting distribution and abundance of organisms – birth rates, death rates, migration.  Change to Ecosystems over Time: Regular and irregular natural changes, succession.  Human activity and the sustainability of ecosystems.  Historical Practices of indigenous peoples and settlers.  Techniques for Monitoring and Maintaining Ecosystems. | 314. Features of Populations.  367-368. Ecological Succession.  365-366. Ecosystem Stability.  357-358. Australian Vegetation Changes.  387. Monitoring Water Quality. |  |  |

**School Assessed Coursework**

**Area of Study Two: Dynamic Ecosystems**

***Outcome 2. Design, conduct and report on a field investigation related to the interactions between living things and their environmentand explain how ecosystems change over time.***

SAC THREE: Report on an Ecosystem.

Text reading and questions.

Biozone Worksheets.