Queensland

The Queensland course has been designed to cover study over a two year period. Candidates taking the Queensland course must meet the general objectives of the syllabus: understanding biology, investigating biology, evaluating biological issues, and considerations related to attitudes and values. The syllabus "provides a conceptual basis on which courses in biology may be constructed, but does not limit the approach taken." The flexible nature of Biozone's resources allows teachers to select learning experiences relevant to the needs and interests of their students. The guide below links the key concepts and key ideas within the syllabus framework to appropriate areas in the Biozone workbook. These are recommendations only and are based on topic emphasis; teachers may find other appropriate combinations of key concepts and ideas within each topic.

KEY CONCEPTS

1 Cells are the functioning units of all living things.
2 Multicellular organisms are functioning sets of interrelated systems.
3 Organisms live an interdependent existence in environments to which they are adapted.
4 A variety of mechanisms results in continual change at all levels of the natural world.
5 There are processes which maintain dynamic equilibrium at all organisational levels.
6 There are mechanisms by which characteristics of individuals in one generation are passed on to the next generation.

KEY IDEAS

1 Cells have a chemical composition that must be maintained for the continued life of the cell.
2 Organelles contribute to the structure and functioning of eukaryotic cells.
3 There are different types of cells and the ways they are organised influences their functioning.
4 Energy required by all living things is obtained in different ways.
5 Cell division is an integral part of growth and reproduction.
6 The set of systems comprising an organism enables it to function in its environment.
7 All systems are interrelated and interdependent.
8 Systems of the body work together to maintain a constant internal environment.
9 Different types of multicellular organisms have different roles in an environment.
10 Malfunctioning in one system or part of a system may affect the whole organism.
11 The external features and internal functioning of organisms together enable an organism to obtain its needs.
12 Abiotic and biotic factors in an environment influence the size of populations and the composition of communities.
13 Energy and matter move within ecosystems.
14 Human actions have significant impacts on interactions within an environment.
15 Different organisms perform different interdependent roles in an ecosystem.
16 An organism has adaptations specific to its environment.
17 Living things employ a variety of reproductive strategies.
18 Human understanding of the mechanisms of reproduction and DNA structure and function have led to intervention in natural processes.
19 Theories of evolution by natural selection can be used to explain speciation and changes in organisms through time.
20 The activity of organisms changes the environment.
21 Evidence shows that organisms coded instructions within the DNA molecule account for their inherited characteristics.
22 In most organisms, coded instructions within the DNA molecule account for their inherited characteristics.
23 During reproduction, DNA is passed from parent(s) to offspring.
24 The genetic variations within a population determines long term survival.
25 Evolutionary process acting on the gene pools of populations have given rise to diversity of organisms.
26 Humans group organisms in a variety of ways to make sense of diversity and to aid communication.

TOPIC IN WORKBOOK	KEY CONCEPTS	KEY IDEAS
Skills in Biology	Any could apply	Any or all could apply
Cell Structure	1, 2, 3, 4, 5, 6	1, 2, 3, 4, 6, 7, 8, 10, 11
Cellular Processes	1, 2, 3, 4, 5, 6	1, 2, 3, 4, 5, 6, 7, 8, 10, 11
Nutrition	1, 2, 3, 4, 5	3, 4, 6, 7, 8, 10, 11, 16
Gas Exchange	1, 2, 3, 4, 5	3, 6, 7, 8, 10, 11, 16
Transport and Excretion	1, 2, 3, 4, 5	3, 6, 7, 8, 10, 11, 16
Reproduction and Development	1, 2, 3, 4, 5, 6	3, 5, 6, 7, 8, 10, 11, 16, 17, 18, 23
The Principles of Classification	1, 3, 4, 6	16, 25, 26
Environment and Adaptation	1, 2, 3, 4, 5	6, 7, 8, 11, 12, 15, 16, 17, 20
Communities	2, 3, 4, 5	6, 7, 9, 12, 13, 15, 16, 20, 21
Population Dynamics	2, 3, 4, 5	12, 15, 16, 20
Practical Ecology	2, 3, 4, 5	4, 6, 7, 12, 13, 14, 15, 16, 20
The Origin and Evolution of Life	4	2, 19, 20, 21, 25, 26
The Evolution of Australia's Biota	2, 36	2, 19, 20, 21, 25, 26
Changes in Ecosystems	2, 3, 4, 5	6, 7, 9, 12, 13, 14, 15, 16, 20