

**KwaZulu-Natal National Botanical Garden
 Environmental Education Centre**

Programme Details

The lessons labelled CAPS are closely aligned to the curriculum. Please select one programme suitable for your class, bearing in mind their grade, language and possible links to the curriculum. Bookings are essential. Feel free to discuss any specific needs with our Education Staff.

Biodiversity Learning Programmes

Programme	Description	Grade	Mark (X)
Foundation Phase			
Senses and seasons	An introduction to senses and interaction with plants around the garden. Learners will listen to stories, sing songs; collect and organize objects, copy patterns and participate in other activities around the garden.	R	
Sensory exploration of plant parts.	Different parts of plants and what a plant needs to grow. Through simple mapwork, they will be able to identify plants and animals in the garden. Exploring shapes and weight, copying movements and singing indigenous songs using appropriate movements and dramatization.	1	
Importance of water and water organisms.	Investigating the importance of water (water in its various form and how it is used); the organisms that inhabit it and the factors that affect them. Identifying the differences between fresh and salt water. Investigating living things around the garden. Learners will also look at the life cycle of a frog. Sensory activities are also included.	2	
Sustainable use of resources.	Exploring the sustainable use of resources, including useful plants and recycling. Investigating threats to biodiversity and exploring the garden using mapwork. A waste audit will also be done and identification of value and threats to our biodiversity.	3	
Intermediate Phase			
Water Ecosystems.	Exploration of living and non-living things; plants, animal habitats and energy transfer in an ecosystem (food chain). Learning about wetlands, water as a resource and how to save water. Exposure to the water issues in SA through learning about the water cycle, availability of water and pollution thereof.	4	
Ecosystems and Inter-relationships.	Introduction to living and non-living factors in an ecosystem. Introduction to trees and leaves. Hunt for living organisms and learn about energy transfer through food chains and food webs and different ecosystem comparisons.	4	
Rocks, Soils and Life-Cycles.	Looking at fossils, different types of rocks and how they are formed. Conservation of biotic and abiotic components of local ecosystems as well as the interdependence of living organisms and soil types.	5	
Indigenous Knowledge	Deals with the development of self & social responsibilities. Investigation of Ancient and Indigenous knowledge, useful plant investigation and exploring myths about plants.	6	
Wetland Ecosystems	Studying the wetland ecosystem, introduction to the theme of water and exploring the concept of photosynthesis. Learning about water pollution. Visiting of other theme gardens such as succulent and water-wise gardens to explore the adaptations of plants and animals to different water conditions.	6	
Senior Phase			
Biodiversity,	Investigating the different components of the biosphere.	7	

Reproduction and Classification.	Classification of the five kingdoms. Learning about the four groups of plants. Exploring the difference between monocotyledons and dicotyledons; pollination and seeds; interdependence and energy flow and conservation of the biosphere and ecosystems.		
Ecosystems and Inter-relationships	Learning about biotic and abiotic factors by identifying the abiotic aspect of the ecosystem; describing how the abiotic factors of the ecosystem affects living things. Selection and marking off an ecosystem by identifying, counting and describe the plants and animals (biotic factors in the ecosystem) and investigating human interference.	8	
Global warming and responses.	Understanding Global Warming and Climate Change. Learning about the spheres of the earth, different local ecosystems - how they adapt and the impact global warming have on these ecosystems. Investigating climate change impact scenarios using photographs and ways in which the learners can respond to the challenges of climate change.	9	
FET Phase			
Biomes	Comparison of the Forest, Grassland and Succulent Karoo biomes and how plants are adapted to them. Exploring threats and pressures in these biomes. Focusing on the biotic, abiotic factors and energy transfer within the forest biome. Using a key to identify plant families within the succulent Karoo biome and matching Succulent Karoo plants and their pollinators.	10	
Tourism	Exploring the main attractions within the KZN National Botanical Garden and why it is a tourist destination. Learning how to interview clients in order to discover the profile of visitors in the garden. Plotting a route using a map and examining the infrastructure which makes the garden a world class destination. Research historical areas of the garden and developing a marketing tool for the garden.	10	
Agricultural Sciences	Soil Investigation. Learning the differences between physical, edaphic, physiographic factors and how they have an impact on the growth of crops in different areas. Investigating the term "photosynthesis" in detail and how alien invasive species could impact the soil. Exploring parts of a flower including plant reproduction, pollinators and propagation. Introduction of the terms: threatened, vulnerable, endangered and extinct.	10/11	
Plant Evolution	Investigating the biodiversity of plants; reproduction of plants; population ecology including interactions in the environment; human impact on the environment; water availability and quality; food security; loss of biodiversity and solid waste disposal. Learn about the history of plants, their classification and changes over time. Comparison of Bryophytes, Pteridophytes, Gymnosperms and Angiosperms, sexual and asexual reproduction, seeds, and the role of plants in ecosystems.	11	
Life Orientation, Global Warming and Sustainability.	Understanding Climate Change and its impacts on the biodiversity of the Kwa-Zulu Natal and beyond; global warming and the Greenhouse Effect. Determining how climate change shapes the type of vegetation found in different ecosystems. Exploring personal responses to nature and issues relating to the environment. Investigating the food web/pyramid and interdependence of the forest ecosystem. Gain knowledge about threatened plants.	10/11	