# Friends of Kloofendal School programme

## Introduction

We are becoming increasingly isolated from the natural world in the modern urban environment of Johannesburg. The Friends of Kloofendal (FroK) offer a programme for schools to help the children reconnect. This programme is aligned with the CAPS curriculum as summarised in the WESSA and WWF Eco-Schools Handbook (2013).

Our guides take groups of up to 20 children on walks into the Kloofendal Nature Reserve, focussing on the prescribed CAPS topics. In addition, we challenge the youngsters to gain an understanding of how the plants and animals and other forms of life survive and thrive in the harsh veld around Johannesburg. The Kloofendal Reserve is an ideal place for such outings:

* Natural environment
* Diversity of habitats
* Good facilities
* Safe
* In the western suburbs of Johannesburg

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| Theme abbreviations: |
| LS  | Life Skills |
| SS | Social Studies / Social Science |
| NST  | Natural Science and Technology |
| NS | Natural Sciences |
| LO | Life Orientation |

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| Grade | Term, theme | Short | Topic |
| R | 3 LS | Healthy environment | Healthy Environment, jobs people do, pollution, recycling - modelling and construction of recycled materials (2 hrs)  |
| R | All, LS | Seasons | Term 1: Summer (2 hrs) Term 2: Autumn, weather types, textures (2 hrs), Weather and animals (2hrs)Term 3: Winter and movement (2 hrs) Term 4: Spring (2hrs), Birds , Reptiles (2hrs), Wild animals (2 hrs), Finding out about one wild animal (2 hrs)  |
| 1 | 3 LS | Animals | Pets and real and imaginary animals - link to care and kindness (2hrs)  |
| 3 LS | Plants | Plants and Seeds (4 hrs) |
| 2 | 2 LS | Animals | Animals & Creatures that Live in Water (4 hrs), Animal Homes (4 hrs)  |
| 3 LS | Life in soil | Soil - types, creatures that live in soil, plants |
| 3 | 2 LS | Insects | Insects, why they are NB for our eco-systems etc (9 hrs)  |
| 3 LS | Natural compost | Life Cycles (6 hrs) Biodegradable and non-biodegradable things start a compost heap to demonstrate this. |

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| 4 | 2 SS | Nature treasure hunt | Geography: Symbols and Keys - Reading a map of a local nature reserve (vegetation types, water bodies). |
| 2 SS | Biomes and vegetation types | Geography: South Africa from above - Location of the Highveld, Lowveld, Great and Little Karoo, Kalahari and Namaqualand (link to biodiversity: biomes/vegetation types and different fauna we encounter in each) |
| 3 NST | Food chain | Term 3, NST: Exploration of the energy chain/ food chain as part of nature and biodiversity.  |
| 4 NST | Habitats | Term 4, NST: Planet Earth- exploration of the components of the earth, as well as the presence of different habitats for different living things. Biodiversity as a key feature of the Earth.  |
| 4 NST | Life forms | Term 4, NST: Planet Earth and how the Earth exists and functions in nature. Exploration of the surface of the Earth. Rocks and different soil types existing in nature, which support different life forms. Growing seedlings in different soil types links to food gardens. |
| 5 | 1 NST | Interdependence of plants and animals | Term 1, NST: Exploration of Earth's biodiversity- plants and animals living in different habitats on Earth. Suggested investigative activity of counting plans and evaluating shapes etc. as an indicator of biodiversity. Interdependence of plants and animals on each other and on available resources- importance of preserving resources. Food and feeding lessons linked to nature. Life cycles in nature, school ground investigation  |
| 6 | 1 NST | Ecosystems: three plants and three animals | Term 1, NST: Photosynthesis; Ecosystems and food webs, selecting a local ecosystem to study three plants and three animals that are found there in terms of their habitats, feeding relationships, and threats to the ecosystem.  |
| 4 SS | Medicinal plants | History: Medicine through time - what plants did people use as medicine long ago/traditionally? Positive /negative impacts of this on biodiversity. |

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| 7 | 1 NS | Sex and survival of plants | The concept of the biosphere (1 week) and the requirements of sustaining life e.g. what do seeds need to grow experiment. Biodiversity (3.5 weeks): Classification of Living things - grouping, drawing, sorting. Diversity of animals and plants. E.g. : link to a biodiversity audit of school grounds/nearby open area and analyse according to above. Sexual reproduction in angiosperms (1.5 weeks): use school gardens to demonstrate diff. flowers and pollination types, seed dispersal etc. Variation within spp (1 wk): classification of spp., looking at differences by doing data collection e.g. survey different tree types in school grounds  |
| 4 NS | Food webs | Solar energy and the Earth's seasons (4weeks)- seasons. Solar energy and life on earth - show connections with ecosystems, food webs and photosynthesis. Stored solar energy - how coal forms, 'ancient sunlight', highlight link with coal burning and greenhouse gases &climate change.  |
| 8 | 1 NS | Food chains, webs, niches & adaptations | Photosynthesis and respiration (2 weeks). Introduction to ecology - ecosystems, Food chains & webs, Ecosystems, adaptations, conservation of ecosystems (5 weeks) *-* biotic, biotic, habitats, interactions between spp. Niches, populations, producers, consumers. Examples: Do an investigation on different ecosystems in and around the school, noting differences between human interfered areas and those that aren’t. Micro-organisms (2 weeks): looking at bacteria , viruses, fungi, both harmful and useful and their importance in ecosystems  |
| 9 | 1 SS | Orienteering | Maps skills (focus: Topographic and orthophoto maps)In-the-field map reading while  |

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| 10 | 3 LO | Orienteering & hiking | Physical Ed- participation in activities that promote recreation and relaxation- can discuss importance and value of nature and biodiversity for this function  |
| 4 LS | Grass identification | Biodiversity and classification- link this section to the previous terms work by identifying grasses or other plants in your local ecosystems using a simple taxonomic key.  |
| 11 | 1 LS | Biodiversity in plants | Biodiversity in plants and flowers- grouping of plants, reproduction in plants, pollination and the significance of seeds. All of this can be linked to a biodiversity project at school where indigenous species are planted at school. You could use this for the basis of an identification and classification lesson.  |
| 1 LS | Biodiversity in Animals | Biodiversity in Animals -The role of invertebrates in agriculture and ecosystems e.g. Pollination, decomposition, soil aeration. Etc.  |
| 4 LS | Loss of Biodiversity | Loss of Biodiversity-habitat destruction, poaching, invasive plants and indigenous knowledge systems. This can be linked to a local study where biodiversity is being threatened or an awareness campaign on rhino poaching (+soil erosion) |
| 12 | 2 LO | Responsible citizenship | p23: Responsible citizenship- environmental rights, campaigns and events. Role of the media in environmental protection. Social and Environmental Responsibility- community responsibility to provide environments and services that promote safe and healthy living, responsibilities of govt, educational and intervention programmes. Formulating a personal mission statement (not guided) |