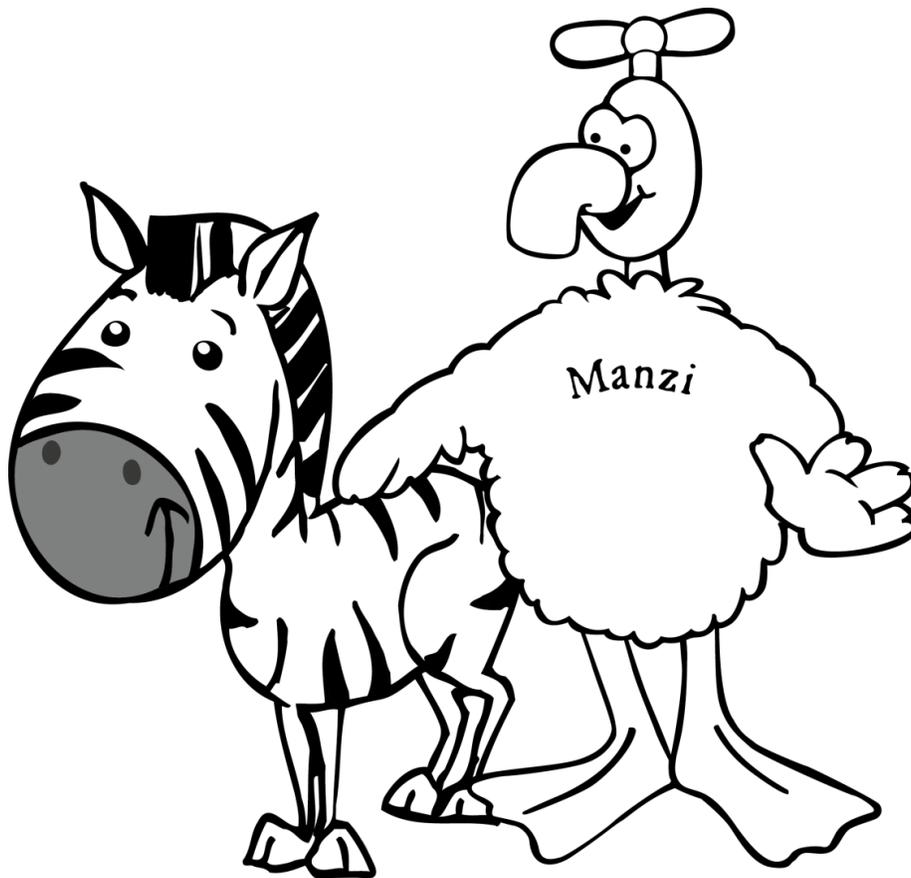


RAND WATER NATURE CENTRE

SCHOOL PROGRAMMES
FOR GRADES R - 12



Water  Wise
RAND WATER

WHAT DO WE OFFER?

The Rand Water Nature Centre is situated on 170 hectares of nature reserve within the Klipriviersberg, south of Johannesburg. This nature reserve, home to blesbuck, zebra, impala and other small mammals, is used as an outdoor classroom. Here the Water Wise Education Team (WWET) offers a number of hands-on, FREE programmes that will transform a learner's day into one of fun and learning. Programmes offered are aligned to the school curriculum.

FOUNDATION PHASE PROGRAMMES

Water is Needed for a Healthy Environment (2 hours)

The learners will learn about the importance of life in water and how to look after water by not polluting and wasting it. This will also include a basic quantity activity where learners will be measuring how much water they use when they flush the toilet, wash hands under a tap, etc.

Animals in Nature (2 hours)

On a guided walk the learners will learn about animals and birds, and how they survive in nature. This programme will include the food they eat and the importance of water for their survival.

Plants in Nature (3 hours)

This programme will cover where plants come from and what they need to grow. Learners will prepare their own soil to plant their seeds and find out what plants need in order to survive. The learners will also participate in a mini treasure hunt outdoors where they have to find information on plants.

Water in Our Lives (2 hours)

Through interactive activities learners will look at how water is used in our lives, how it is wasted and ways of using it wisely. Safe and unsafe drinking water is covered as well as the storing of clean water.



Water Creatures (2.5 hours)

A programme that includes activities on fresh water creatures. Learners will do some pond dipping to catch some water life and they will learn about the life cycle of a frog.

Animal Homes (3 hours)

There are a lot of homes in nature. On a nature walk learners will find and identify different animal homes and the materials used by animals to construct their homes. The programme will also include comparing and matching animals to their homes.

Life Cycles and Insects (3 hours)

Learners will learn about the different life cycles of water animals living in a wetland and identify different kinds of insects on a nature walk.

Digging into the Past (3 hours)

Learners will visit an archaeological site on our nature reserve. They will see ruins of a Sotho Tswana Iron Age site where people used to live 200 years ago. They will also learn about the implements they used and compare today's lifestyle to the past.



INTERMEDIATE PHASE PROGRAMMES

Living and Non-Living Things in the Natural Environment

Learners will go into the nature reserve to investigate the living and non-living things. This will cover plants and their different parts and how they make food. This programme also covers animals, and their shelters, and non-living things in a natural environment.

Water in South Africa (3 hours)

A fun, interactive, in-depth look at water: how we get it and how we use it and abuse it. This programme includes activities that cover the water cycle; water uses; the collection, transport and storage of water; an introduction to water pollution; and the importance of using water wisely.

Biodiversity (3 hours)

Learn about different plants and animals that occur in the grassland habitat and how they differ from each other. The learners will take part in fun, outdoor activities in the nature reserve.

Life in an Ecosystem (3 hours)

This outdoor, hands-on programme involves the practical investigation of a land or water ecosystem where the interactions between living and non-living factors are explored. This includes the possible food webs that occur in that particular ecosystem. The land ecosystem explores the wealth of different plants and

animals that occur in our nature reserve. The water ecosystem explores a wetland that is full of life.

Natural and Human-Made Water Purification (3 hours)

A programme that focuses on how tap water is purified. Learners will do an experiment to get a better understanding of the purification process. This process will be compared to wetlands who work as natural water purifiers.

SENIOR PHASE PROGRAMMES

Habitats in the Ecosystem and Biodiversity (3 hours)

The non-living factors have an influence on the living factors of an ecosystem. This programme will give learners an opportunity to go on a nature walk in a grassland and find out how various ecosystems function.

Use and Management of Water in South Africa (3 hours)

The use and over use of water resources and how water is managed in South Africa will be covered.

Interactions and Independence (3 hours)

This programme will cover the impact of disruptions in the natural ecosystem e.g. floods, pollution of water, habitat destruction, killing of rhinos, etc. The learners will identify an area in an ecosystem and predict the possible disruptions that can occur and their causes.

FET PROGRAMMES



Climate Wise (3-4 hours)

Climate change in all its complexity will be covered: its causes, consequences, impact on South Africa and the possible actions to reduce the impact.

Water in Our World (3-4 hours)

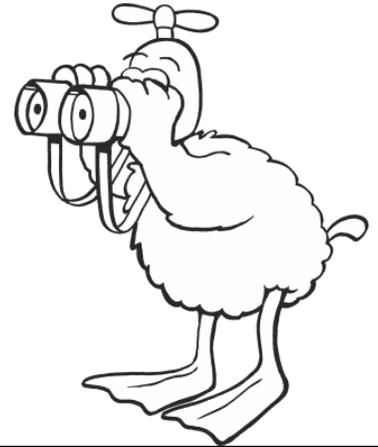
This programme looks at water as a natural resource, its importance in social and economic development, the challenges to water supply and how water can be conserved. The following is investigated:

- The state of river catchments in South Africa
- The quality of river water
- How is tap water cleaned?
- How is clean water distributed?
- An analysis of water consumption.

Investigation of an Ecosystem and Biomes (3 hours)

This programme, particularly aimed at Grade 10 learners, assists learners with their Ecology projects. The following is undertaken:

- Setting up of a quadrant
- Practical data collection in the nature reserve
- Use of apparatus (thermometer, compass, rope, etc.)
- Use of information cards to identify plants and animals.
- How to write a scientific report for the project.



Population Ecology (3 hours)

In this practical programme learners will undertake hands-on activities in the nature reserve. This will include sampling using quadrants, collecting data, interpreting the data and presenting the data using graphs. The activity will give the learners an opportunity to discover how different factors (e.g. availability of water and food, etc.) affect the survival/growth or mortality rate of certain species living in a natural environment. The learners will then come up with recommendations of how the nature reserve should be managed.

Climate Change and the Availability of Water (3 hours)

This programme will focus on how human actions have an impact on the environment and how changing our lifestyle can be a step towards slowing down climate change and reducing our "carbon footprint". This will cover a practical study of a water source, day to day utilisation of water and how our actions can impact on the availability and quality of water.

Environmental Responsibility (3-4 hours)

A study of pollution and other human impacts on the atmosphere, lithosphere, hydrosphere and biosphere i.e. the climate, water and food supply, waste management and loss of biodiversity and how all of these are affected by water.

NOTE: TEACHER PROGRAMMES ON ANY TOPIC ARE ALSO OFFERED



WATER QUALITY TESTING FOR ALL PHASES

AT SCHOOLS

If your school has a water source nearby, you can invite the team to do water quality testing with your learners. Water quality testing equipment will be provided by Rand Water.

- **MiniSASS:** includes catching and identification of water life to assess the health of a river.
- **Water Quality Testing:** includes the testing of pH, turbidity, coliform bacteria, dissolved oxygen, temperature, nitrates and phosphates.

AT OUR LABORATORY (MONDAY-THURSDAY ONLY)

Water quality testing for school projects can be booked for 1-4 learners. The learner/s will need to take samples in the field and then can undertake the following tests in the laboratory: pH, turbidity, coliform bacteria, E.Coli, dissolved oxygen, nitrates, phosphates and conductivity. Please make a booking for this service. The procedure of taking samples will be shared with you.



COST: R50.00 for 1-4 samples and R5.00 for every extra sample.

PLEASE NOTE: Only school staff may make bookings with Rand Water, and not tour companies.

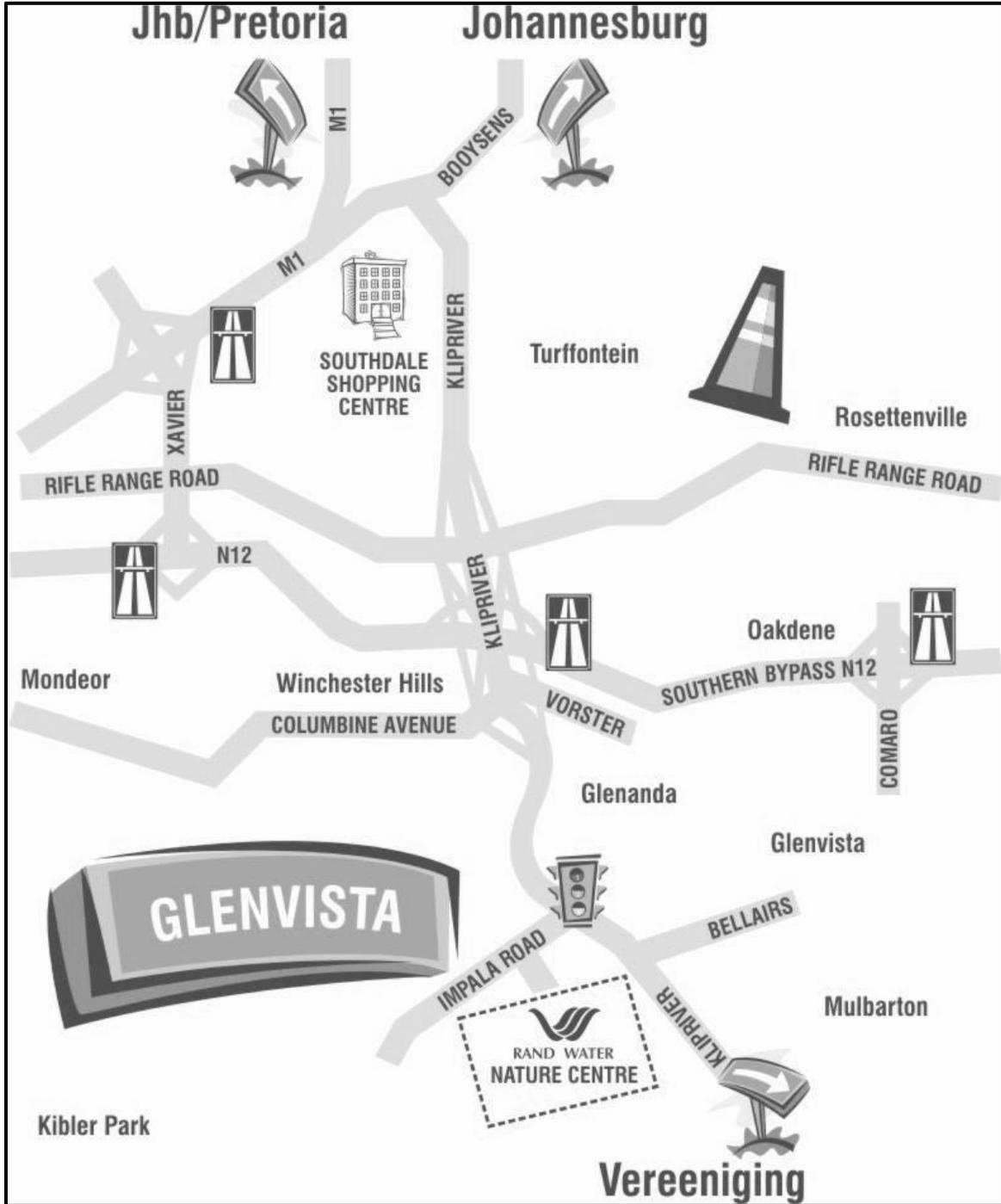
CONTACT DETAILS

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Website : www.randwater.co.za and click on the Water Wise logo.



MAP TO THE RAND WATER NATURE CENTRE

522 Impala Road,
Corner Impala Road & Kliprivier Drive,
Glenvista, Johannesburg



DIRECTIONS TO THE RAND WATER NATURE CENTRE

From Johannesburg North

Distance: +/- 30 kms

- Take the M1 South Highway towards the Johannesburg CBD.
- Pass the following off-ramps:
 - 11th Avenue
 - Glenhove
 - Riviera
 - Oxford
 - Jan Smuts
 - Smit
- Follow M1 South towards Bloemfontein.
- Take Booyens off-ramp (M27). Keep left into Booyens Rd.
- Go through 3 traffic lights.
- Turn right at the 4th traffic light into Kliprivier Drive.
- Go through 3 traffic lights (all together 6.4kms).
- At the 4th traffic light turn right into Impala Road.
- Turn left into Rand Water.

From Johannesburg West

Distance: +/- 30 kms

- Take the N1 South Highway passed the following off-ramps:
 - Beyers Naude
 - 14th Avenue
 - Gordon
 - Maraisburg
 - Nasrec
- Get on to the N12 towards Witbank.
- Pass Xavier Street off-ramp.
- Take the Kliprivier Drive off-ramp.
- Turn right at the second set of traffic lights into Kliprivier Drive.
- Go through 3 traffic lights.
- At the 4th traffic light turn right into Impala Road.
- Turn left into Rand Water.

From Johannesburg East

Distance: +/- 30 kms

- Take the N3/12 Highway
- Follow Kimberley road signs and pass the following off-ramps:
 - Marlboro (M60)
 - London Rd (M54)
 - Edenvale (M37)
 - Johannesburg (R25)
 - Linksfield (M16)
 - Van Buuren (M52)
 - Germiston/Johannesburg (M2)
 - Rand Airport
 - Voortrekker Rd, (R103)
 - Johannesburg/Alberton/Vereeniging (R59)
 - Comaro Street (M11)
- Take Kliprivier Drive off-ramp (R566)
- Turn left at first traffic light towards Vereeniging (R566)
- Go through 2 traffic lights (All together 2kms).
- Turn right at the 3rd traffic light into Impala Road.
- Turn left into Rand Water.



The Water Wise Education Team looks forward to hosting you at the Rand Water Nature Centre