

# Teaching Guide 8

**Biodiversity** 

**Healthy and Sustainable Schools Programme 2nd Edition** 

## **Preface**

The Healthy and Sustainable Schools Programme is a result of Sazani Associates UK and Sazani Trust Zanzibar's ongoing partnership with the Ministry of Education to improve the quality of education and learning in Zanzibar.

The project is aligned with the Sustainable Development Goals and actively supports teachers and schools in achieving Global Education Target 4.7.

By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development (UNSD, 2021).

Focusing on the combined importance of key skills and healthy and sustainable life skills, we have revised and updated our series of fifteen Teaching Guides to support competency based curriculum linked learning.

The teaching materials are suitable for use in the last two years of primary across the transition to the first two years of secondary school.

There are fifteen Teaching Guides in this series, themed around topics that contribute to healthy and sustainable life styles within the context of Zanzibar, as follows:

- 1. Why we need to eat well
- 2. Getting enough food
- 3. Keeping food safe and clean
- 4. Population and health
- 5. Water
- 6. Sanitation and waste
- 7. Tourism
- 8. Biodiversity
- 9. Agriculture
- 10. Fisheries and marine resources
- 11. Energy
- 12. Land transport
- 13. Land use
- 14. Climate change
- 15. Participatory action learning

Each Teaching Guide is themed and contextualized to bring Zanzibar and contrasting localities into a classroom setting and to make learning engaging and relevant to local livelihoods. Activities are gender responsive, participatory and proven to support numeracy, literacy, English language and critical thinking.

For more information please visit our website www.sazani.org

## **Acknowledgements**

This series of fifteen Teaching Guides has been adapted from Sazani Associates HSSP topic books by Rajab S. Ali, Safia M. Abdalla, Mwanawije M. Makame, Patrick Rutledge, Nicola Shone, Joshua Shawe and Rashid O. Shehe, with editorial review by Marilyn James and Dr Cathryn MacCallum. Graphic design and layout by Seven Six Design.

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## **Learning Activities – Biodiversity**

Activity 1: Natural area habitat survey

Activity 2: Animals in zanzibar

Activity 3: Habitat and biodiversity

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## 1 Introduction

The learning content and activities in this Teaching Guide have been designed to be easily integrated across the curriculum. Throughout the resource, knowledge, skills, attitudes, and values are interlinked and are built into all the topic areas addressed.

We have revised and updated our series of fifteen Teaching Guides to support competency-based, curriculum linked learning and development by focusing on the combined importance of key skills including numeracy, literacy, critical thinking and English language for healthy and sustainable lifestyles. The teaching materials are suitable for use in the last two years of primary across the transition to the first two years of secondary school.

There are different methods of displaying this information, through text, tables, diagrams, images and activities. Each activity includes icons to illustrate which curriculum area and which key skills are used as summarized in the tables below.



Activity / STD V-VI	Maths	English	ICT	Civics	Geography	History	Science	Religion	Arabic
Natural area habitat survey					X		X		
Animals in Zanzibar		Х	Х	х	X	X	Х		Х
Habitat and biodiversity		Х	Х		Х		X		
Nature links		Х			Х		Х		
Biodiversity web		Х			Х		X		
Interdependence activity	Х	Х	Х	Х	Х	Х	Х	Х	X

Activity / Form 1-2	Maths	English	ICT	Civics	Geography	History	Biology	Chemistry	Physics	Religion	Arabic
Natural area habitat survey					Х		X				
Animals in Zanzibar		Х	х	Х	x	Х	Х	Х	Х		Х
Habitat and biodiversity		Х	Х		X		Х	Х	Х		
Nature links		Х			x		Х				
Biodiversity web		Х			x		Х				
Interdependence activity	Х	Х	X	Х	Х	Х	Х	х	Х	Х	х

## 2 Topic overview

Biodiversity means all living things – all of life on earth - the great biological diversity that we are part of ourselves, along with whales, birds, insects, worms, trees, bacteria, etc. What is happening to our biodiversity? Is it in good shape?

## **Key words**

**Biodiversity:** the variety of living things in a given place – whether a small stream, an extensive desert, all the forests in the world, the oceans, or the entire planet.

**Rainforest:** is a term for a forest of broad-leaved evergreen trees that receives high annual rainfall and is characteristically associated with tropical and subtropical regions of the world.

**Mammal:** a warm-blooded animal (as a dog, mouse, bear, whale, or human being) with a backbone that feeds its young with milk produced by the mother and has skin usually more or less covered with hair.

**Reptile:** a cold-blooded animal (as a snake, lizard, turtle, or alligator) that breathes air and usually has the skin covered with scales or bony plates.

**Amphibian:** are small vertebrates that need water, or a moist environment, to survive. The species in this group include frogs, toads, salamanders, and newts. All can breathe and absorb water through their very thin skin.

#### **Box 1. Biodiversity facts**

- A single tree in a rainforest (e.g., In Brazil, central Africa or Indonesia) can be home to more than 1000 species of insect, as well as huge numbers of smaller plants such as mosses and orchids. The tree may be visited by many birds, reptiles, amphibians and mammals who find food, shelter and breeding places in the tree.
- A third of all fish species and a quarter of all mammal species are in danger of extinction.
- The earth's forest, freshwater and marine environments have been reduced by 30% in thirty years.

"In the delicate world of relationships, we are tied together for all time."

John Steinbeck, writer

## 3 Habitats in Zanzibar

### **Key words**

**Ecosystem:** is made up of all of the living and nonliving things in an area. This includes all of the plants, animals, and other living things that make up the communities of life in an area.

Organism: is any living thing.

Habitat: is a place that an animal lives. It provides the animal with food, water and shelter.

**Carnivore:** meaning "meat eater", is an animal whose food and energy requirements derive solely from animal tissue or meat, whether through hunting or scavenging.

**Herbivore:** is an animal anatomically and physiologically adapted to eating plant material, for example foliage or marine algae, for the main component of its diet.

Omnivore: is an animal that has the ability to eat and survive on both plant and animal matter.

Zanzibar is home to a host of fragile ecosystems that are the habitat of a number of organisms including mammals, birds, reptiles, insect, plants, and amphibians.

A great number of these species can only be found in Zanzibar and need extensive preservation efforts to continue to survive.

Habitats are the places where animals and plants live and get their food, water, sunlight, space and other things needed to survive. Animals and plants are adapted to the habitat where they live, that is, they have specific characteristics that apply to their unique habitat. The main habitats in Zanzibar are:

- Land habitats forests and glacis (a gentle slope and soil).
- Wetland habitats freshwater marshes and rivers.
- Coastal habitats mangroves, sandy beaches and rocky shores.
- Marine habitats coral reefs, reef flats, seagrass beds, mudflats, sandflats, and the open sea.

## 3.1 Organisms in land habitat

**Land habitats** are found on land like forest, grass land and soil. Some species of organisms lives on tops of trees, forest, grassland, rock caves, highland areas (ibex in alpine) and ice shelves.

**Land animals** are grouped according to their mode of nutrition which includes carnivorous, herbivorous, and omnivorous.

Carnivores are animals that feed on other mammals such as wild dogs, lions, and hyena.

Omnivores are animals that feed both plants and animals (human beings are in this group).

**Herbivores** are animals whose primary food source is plants, this group includes zebra, duiker, buffalo, goats, and cows.

Animal	Image	Mode of nutrition	Habitat
Red colobus monkey		Herbivorous (fruits, leaves and shoots)	Tree tops (forest)
Pemba flying fox		Herbivorous (fruits, leaves and figs)	Caves and mangroves forest
Ader's duiker		Herbivorous (leaves and fruits)	Forest
Bush baby		Herbivorous (insects and fruits)	Tree tops
Hyrax		Herbivorous (leaves and fruits)	Trees of bush and caves
Monitor lizard		Omnivorous (mollusk, crickets, and insects)	Grass land
Giant rat		Omnivorous (eats plants and cereal food)	Forest and caves
Genet		Carnivorous (feeding insect, small mammals)	Forest
Chameleon		Carnivorous (feeding insects and small mammals such as smaller lizards, spiders)	Trees (grass land)



## Care of domestic animals and pets

### **Key words**

**Domestic animals:** are animals that have been selectively bred and genetically adapted over generations to live alongside humans. They are genetically distinct from their wild ancestors or cousins.

**Veterinarian:** also known as a veterinary surgeon or veterinary physician, is a professional who practices veterinary medicine by treating diseases, disorders, and injuries in animals.

Domestic animals are those animals that are kept at home as a means of food or as pets. Cows, goats, hens, sheep, and ducks are domestic animals and are a source of food. Some animals are used for carrying goods and ploughing such as camels, horses, donkeys, and bulls. Animals such as dogs, parrots, pigeons, rabbits, and cats are pets serving different purposes. A parrot may be for amusement and a dog may be for keeping guard.

## 4.1 Proper care of domestic animals

- We need to care for and arrange convenient living buildings, such as cages.
- We should provide them with a comfortable and safe dwelling place.
- Sheds for domestic animals should be made airy and well lit.
- Sick animals should be treated properly with medicines according to the advice from a veterinary doctor.
- Should be provided with proper feed at the right times.



Animal feeding



Animal in their cage



Animal medication

## 5 Wetland habitats

### **Key words**

**Wetland:** Land consisting of marshes or swamps. The ground in a wetland is saturated, or full of water.

**Seasons:** Divisions of the year (spring, summer, autumn, winter, rainy season and dry season) marked by particular weather patterns and daylight hours, resulting from the earth's changing position with regard to the sun.

Erosion: is the wearing away of the land by forces such as water, wind, and ice.

**Aquatic animal:** is an animal, either vertebrate or invertebrate, which lives in the water for most or all of its lifetime.

A wetland is an area of land that is saturated with water. They do more than sustain plants and animals in the watershed, however. Many wetlands are not wet year-round because water levels change with the seasons, during periods of excessive rain, wetlands absorb and slow floodwaters, which helps to alleviate property damage and may even save lives. Wetlands are found along waterways and in floodplains.

## 5.1 The importance of wetland habitat

Wetland habitats serve essential functions in an ecosystem, including acting as:

- Water filters.
- Providing flood control.
- Erosion control.
- Providing food for birds who eats aquatic animals.
- Homes for freshwater fish, crabs, frogs, and wildlife.





Wetland Frog

## **Endangered species in Zanzibar**

## **Key words**

**Endangered species:** a species of animal or plant that is seriously at risk of extinction.

Extinction: Extinction of a particular animal or plant species occurs when there are no more

individuals of that species alive anywhere in the world – the species has died out.

Terrestrial: of or relating to the earth or its inhabitants

Population: the whole number of species living in a country, city, or area.

Zanzibar hosts many unique and rare endangered species on the brink of extinction. This is the reason the Government of Zanzibar created a policy to conserve a number of marine and terrestrial habitats including:

- Zanzibar servaline genet.
- Green turtle.
- Olive ridley turtle.
- Zanzibar dolphins.
- Blue duiker (dwarf antelope).
- Fischer's turaco.
- Osligation of the second of

Endangered species are any species that are at risk of disappearing because of sudden rapid decrease in its population possibly due to loss of habitat.

## Zanzibar marine habitat

### **Key words**

Coastal habitats: Coastal habitats are found wherever the land meets the sea.

**Coral reef conservation:** is the process of modifying human activities to avoid damage to healthy coral reefs and to help damaged reefs recover.

**Marine ecosystems** are the largest of Earth's aquatic ecosystems and are distinguished by waters that have a high salt content. These systems contrast with freshwater ecosystems, which have a lower salt content.

**High and low tides:** The regular rise and fall of the ocean's waters are known as tides. It is high tide when water covers much of the shore by rising to its highest level. It is low tide when water falls to its lowest level and recedes from the shore.

Oceans and coastal habitats can be created by a species living in them such as coral, mangroves, sandy beaches, and sea grasses.

Zanzibar Chumbe island is a coral park that was established for the purpose of coral conservations and sustainable management of marine ecology.

#### 7.1 Coral reefs

A coral reef is an amazing underground habitat of ecosystem. Mostly built by stone coral in which polyps hold together. Coral reefs flourish in oceans waters that provide few nutrients and support the life of fish by providing food and shelter.







## 7.2 Sea shore and sand beaches

The sea shore (also called coastline or beach) is the portion of continent where the land and the sea meet. Sea shores include an area covered by water during high tide and lower tides.



Animals found at the seashore and beach include turtles, crabs, oysters, clams, sea cucumbers and starfish.







Oyster Sea cucumber





## **Mangrove forests in Zanzibar**

## **Key words**

**Mangrove:** a tree or shrub which grows in tidal, chiefly tropical, coastal swamps, having numerous tangled roots that grow above ground and form dense thickets.

Estuaries: the tidal mouth of a large river, where the tide meets the stream.

Bays: a broad inlet of the sea where the land curves inwards.

Predators: an animal that naturally preys on others.

Mangroves cover a total of 1800 hectares in Zanzibar (6,000 hectares on Unguja island and 12,000 hectares on Pemba) and they are best developed in estuaries. In Zanzibar, mangrove habitats more commonly exist in protected areas, such as bays, and are more widespread along the western and southern coast of the islands.





## 8.1 The significance of mangrove forests

- Mangroves provide a nursery for fish.
- Mangrove roots help fish such as crabs, prawn, and other marine animals to hide from predators.
- Birds nest in mangroves trees out of the reach of land predators.
- Leaves and seeds are a food sources for monkeys and bushbabies.

## Open sea and ocean

#### **Key words**

Open sea: an expanse of sea away from land.

**Surface water:** Surface water is water located on top of the Earth's surface such as rivers, creeks, and wetlands.

**Sea bed:** The seabed is the bottom of the ocean, no matter how deep. All floors of the ocean are known as 'seabeds'.

**Tourist attraction:** is a place of interest where tourists visit, typically for its inherent or an exhibited natural or cultural value, historical significance, natural or built beauty, offering leisure and amusement.

**Oxygen:** a colourless, odourless reactive gas, the chemical element of atomic number 8 and the life-supporting component of the air.

The open sea is the middle of the ocean or sea without land in sight. From 200m (660 ft) down to around 1,000m (3,300 ft) between water surface and the ocean ground. The most organisms found in the ocean include sharks, whales, dolphins, squids, tuna fish, flying and billfish.

## Kizimkazi dolphins

Kizimkazi is the south of Unguja and it is about 37 miles and 57.5 km from Zanzibar town.

Dolphins are never hunted in Zanzibar but serve as a tourist attraction and contributes major income to the tourism sector.

Dolphins can swim or dive for 1000 feet without needing to come up for air. This means that they can cover huge distances quickly, without being slowed down by their need for oxygen. They are carnivorous (feed of off other fish).

#### **Zanzibar sharks**

A shark has fins and a streamlined body that help it swim through water.

It has gills, which take in oxygen directly out of the water which means sharks can also stay underwater and not have to come to the surface to breathe. Sharks have a tremendous number of sharp teeth, which make them fierce predators. They are carnivorous (feed off of other fish).





## Interdependence of plants and animals

#### **Key words**

Streamlined: having a form that presents very little resistance to a flow of air or water.

Gills: are what fish, amphibians, and some other animals use to breathe in water.

Interdependence: the state of being dependent upon one another

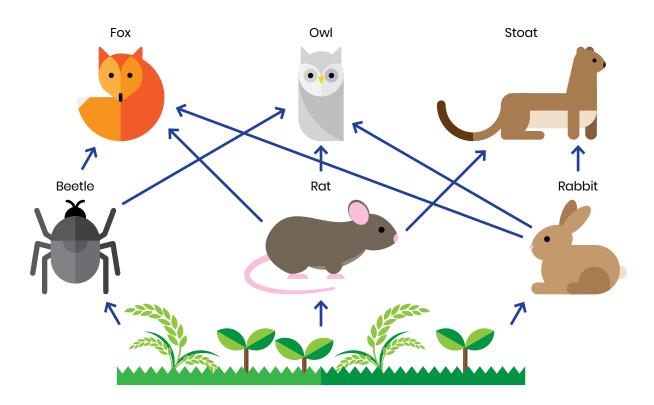
**Food chain:** describes the order in which organisms, or living things, depend on each other for food. Most food chains start with organisms that make their own food, such as plants. Scientists call them producers.

Artificial habitat: an artificial habitat is one that is created by man to copy the natural environment.

**Colonization:** occurs when one country takes control of another country or region, establishing a settlement, or permanent part of the colony, in order to control the area and gain riches.

**Micro-habitat:** is a small-scale, specific habitat which supports the survival of certain animals or plants. For instance, a rockpool or a rotting log.

**Endemic species:** are especially likely to develop on geographically and biologically isolated areas such as islands and remote island groups.



All organisms in an ecosystem depend on each other. Plants and animals must interact to sustain their life, we call this interdependence. If the population of one organism rises or falls then it can affect the rest of the ecosystem.

The sequence of food chain and food web shows how organisms depend on each other.

## 10.1 Artificial habitats

Artificial habitats are created by humans and include plantations, gardens, open areas, road bridges and newly reclaimed land. All of these can be colonized by plants and animals.

In addition, there are small habitats (called **micro-habitats**) in which many of the smaller kinds of plants and animals live, such as rotting tree trunks, fallen leaves on the forest floor, tree bark, coral heads, seagrass leaves and inside the bodies of animals.

These are miniature worlds with islands, tiny mountains, valleys, caves, and lakes (at least to those tiny creatures that live there). All of it plays a vital role in the maintenance of our planet, keeping it healthy.

## 10.2 Why is Zanzibar's biodiversity special?

Zanzibar's biodiversity is special not just because it occurs in our country, it is special within the world too. Some of our plants and animals have their origins from a far-off time and some are found nowhere else in the world. These are known as endemic species. In Zanzibar, the red colobus monkey (Kima Punju) and the Pemba flying fox (Popo wa Pemba) are endemic species.



Red colobus monkey (Kima Punju)



Pemba flying fox (Popo wa Pemba)



## What we have learned:

- 2 Zanzibar has a rich biodiversity and is home to many different creatures including some that are endangered such as the red colobus monkey.
- The environmental area where animals and insects live is called a habitat and this includes land, freshwater, coastal and marine habitats.
- Increasing human population and the subsequent development of land by humans sometimes results in habitat loss for animals, insects and birds.
- We should take care of biodiversity as the earth belongs to all creatures and not just humans.

Knowledge and skills	Attitudes and values
Understand the importance of biodiversity; understand human impacts on biodiversity; research information.	Appreciate biodiversity; be aware of the need to conserve biodiversity. Value interdependence.

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## **Learning activities**

## **How How How activity**

Refer to the **How How activity** detailed in the "Participatory Action Learning" book to help the student explore different ideas and concepts and challenge each other's points of view.

## **Activity 1: Natural area habitat survey**







## **Resources required:**

- Pens and pencils
- Risk assessment
- ID guides of plant species
- Paper (recording data)
- Quadrat
- Camera
- Measuring tape

#### Set up:

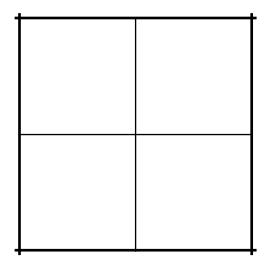
Locate a natural area such as a local park.

Conduct a risk assessment and put in place measure to ensure learners safety while carrying out the field trip. This may include minimum group sizes, a supervised safety point and a specified area that learners may be in. Mark out a designated area that learners can undertake a survey in.

If quadrats are not readily available a simple frame can be constructed using 4 sticks and some tape or string. Learners could construct their groups own quadrat as a starter activity.



Example of a homemade quadrat



## **Activity:**

- Designate an area that learners will survey, lay out a 10x10 metre grid with a tape measure and have learners randomly place their quadrat at points within the grid. Try to ensure the area has some varying vegetation cover.
- Place learners into groups and have each group conduct a survey of the habitat in the natural area, dependant on what the teacher would like learners to observe.
- Abundance of species is the most common method but could also include type of ground e.g. sand, rock, earth, grass, bush etc. for younger learners.
- For abundance learners can either count individual plant species or the % of ground covered by the overground parts of plant species. Note that the total % cover of all species will often add up to over 100%, as species can be on top of each other within a quadrat.
- Utilise any ID guides and local knowledge for the area to help identify plants if a plant is unable to be identified take a photo of it and put it down with a descriptor (for example yellow flower I) so that it can be identified at a later date. Descriptors can be used entirely for the activity if necessary.
- Learners can do multiple quadrats in the area to get more data and ensure all learners have had a turn.
- A data collection sheet such as the example below can be drawn by learners to collect data.

Species	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
% Species 1						
% Species 2						
% Species 3						
% Species 4						
% Species 5						
% Species 6						
% Species 7						

#### **Review:**

The following questions or points may be used to review the activity:

Once back in the classroom ask learners to produce a bar chart that represents the abundance of species found in the area surveyed.

## **Activity 2: Animals in Zanzibar**









## **Resources required:**

- Pens and pencils
- Paper

## Set up:

Display animals from the Teaching Guide on the board or list options if not possible.

A rough example drawn on the board containing a sketch of an animal and its habitat.

#### **Activity:**

- Place learners into groups
- Allocate an animal from to each group.
- Learners can then individually produce a sketch of the animal and label characteristic features. Learners may discuss the animal within their groups and help each other.
- Once learners have completed their sketch and labelled features, they can then add information about the type of habitat the organism lives in and mode of nutrition.
- Learners can then as a group on a separate larger sheet of paper draw the animal in its natural habitat with examples of its mode of nutrition present (for example fruit for monkeys, prey for predators).

#### **Review:**

The following questions or points may be used to review the activity:

Learners can as a group present their animal to the class and explain its characteristic features, habitat and mode of nutrition.

## **Activity 3: Habitat and biodiversity**







## Resources required:

Question / discussion cards

#### Set up:

Prepare individual question / discussion cards relating to habitats and biodiversity, place these into packs of cards.

Examples questions / discussion topics could include:

- What is an omnivorous animal? Can you give some examples?
- Ocan you think of a species in Zanzibar that needs extra protection? Why?
- Ocan you give examples of domestic animals who are carnivores?
- What is the name for an animal who eats only plants? Can you give some examples?
- Are there any animals that live in both wetland and land habitats?

#### **Activity:**

- Place learners into groups.
- Hand out packs of cards to each group.
- Learners can send a member of their group to be a "Questioner" and go around each of the other groups to ask a question on one of their cards.
- Once each groups "Questioner" has returned to their group they can feedback the answers each of the other groups came up with for the questions and the group can decide what their answers would be.
- Learners can repeat the cycle until all question / discussion cards have been used the "Questioner" for each group should be changed each cycle.

#### **Review:**

The following questions or points may be used to review the activity:

Each group can feedback the combined answers the whole class had to each of their cards.

## **Activity 4: Nature links**







## Resources required:

- Pens and pencils
- Paper

## Set up:

Display the below questions on the board:

A 'wild' animal that lives in or near your home (i.e. not a pet or domestic animal).	A plant that is useful to humans.
An animal that needs plants as food.	An animal that carries a disease which harms humans.
A plant that grows on another plant (such as a tree).	An animal that feeds on other animals.
An introduced plant or animal that has caused problems for native species.	A plant that depends on animals in some way.
An animal that carries pollen from one plant to another.	An animal that lives or has its home in a tree.
A plant that is disliked by animals because it has a nasty taste or some other form of defence.	An animal that feeds on dead material and helps to decompose it.
A plant that provides something useful, other than food, for an animal.	An animal that looks like a plant (as a form of camouflage).
Two organisms (species) that depend on each other in some way.	An organism (species) that moves to a different habitat for reproduction (e.g. to lay it's eggs).

## **Activity:**

- Introduce to learners the concept that all plants and animals in the world (including humans) are interlinked in a huge "web of life".
- Learners will be exploring the many ways in which they are interlinked.
- Ask learners to individually answer as many of the questions on the board as they can from their own knowledge. If they cannot then encourage them to try to use books or ask someone for more information. Learners can give multiple examples if they wish.
- Once learners have completed their answers have them feedback a few examples for each question and write these on the board.

#### **Review:**

The following questions or points may be used to review the activity:

- Refer to the examples for each question on the board.
- Ask learners if they can explain how each link works and whether the plant or animal would survive without the link.

## **Activity 5: Biodiversity web**









## Resources required:

- Thread / string
- Paper
- Pens and pencils

## Set up:

On the board, display the below table which gives a list of marine and land habitats found in Zanzibar as well as organisms that are found within these habitats.

Marine habitats	Organism			
Coral reef	Coral polyps	Seaweed	Rabbit fish	Shark
Seagrass bed		Clam	Seagrass	Sponge
Mangrove	Sea cucumber	Octopus	Tuna	Small fish
Open sea	Whale shark	Lobster	Green turtle	Starfish
	Jellyfish	Worms	Dolphin	Crab

Land habitats	Organism			
Caves	Giant rat	Genet	Monitor Lizard	Bush baby
Tree tops (forest)	Red colobus monkey	Flying fox	Hyrax	Duiker
Grass land	Blue Sykes' Monkey	Chameleon		

## **Activity:**

- Allocate learners to represent an organism or a habitat, learners may be placed in groups to ensure everyone is included.
- Have learners create a label for their habitat / organism, learners could do a drawing as well as writing down the name.
- Have learners stand in their groups with their labels displayed.
- Hand a string or thread and link the habitats together, discuss how marine and land habitats might be linked together.
- Then have each organism link themselves to the habitat in which it lives, this may be multiple habitats.
- Next have learners create links between organisms that they interact with in some way (e.g. preys on another organism or uses them as shelter).
- Once learners have completed this they now have a biodiversity web!

#### **Review:**

The following questions or points may be used to review the activity:

Utilise the biodiversity web to demonstrate how damages to one habitat effects another (e.g. loss of mangroves mean loss of small fish nurseries which then effects organism in other marine habitats).

## Activity 6: Interdependence activity





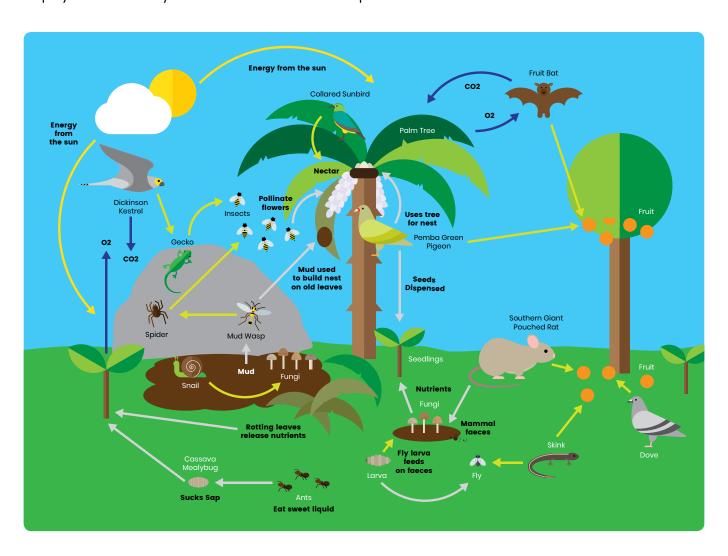


## **Resources required:**

Biodiversity web

## Set up:

Display the "Biodiversity web" on the board or share copies around the class.



#### Set up:

- Explain to learners that interdependence means "How living and non-living things depend on one another".
- Demonstrate this by having learners act out a basic food chain of Grass > Rabbit > Python.
- Ask learners:
  - ① What would happen to the rabbits if the pythons were removed (population increase)?
  - What impact would this have on the grass (population decrease)?
  - ① What wider impacts could this have on other organisms in the ecosystem?
  - Second in the second of the
- Place learners into groups.
- Ask learners to study the biodiversity web and think of connections between several organisms that depend upon each other in Zanzibar.
- Learners can then prepare their own demonstration of "interdependence" to present to the rest of the class of acting out the interactions between the organisms.
- Each group can present their demonstration of interdependence and the teacher can ask the group what would happen if any of the organisms involved were reduced in population.

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