CapeNature Cubs Club
Kids Conserving Nature

Cubs Club lesson plans 2025

GROUPS



CapeNature Cubs Club
Kids Conserving Nature

GROUPS

Cubs Club lesson plan
for insect biodiversity

Use this lesson plan to support your action projects for this term.



Date

May to July 2025

Duration

1. **Introduction:** 15 minutes to 30 minutes
2. **Action Project:** 30 minutes to 8 hours
3. **Consolidation:** 15 minutes

Total Time: Between 1 hour and 1 day (depending on the project chosen).

Support material from toolbox



Whistle/ binoculars for outings



Seeds and collapsible spade

Magnifying glass

Kai & Friends Book & Activity Book

Newsletter name

Bug Buzz

Theme

Biodiversity - Insects

Key message

We need biodiversity (with the focus on insects) **to survive**. Insects are important and we need to protect them



Topics covered

Biodiversity (optional on programme)

- What biodiversity is
- Why biodiversity is important
- Biodiversity context in Western Cape (unique and irreplaceable)

Insects

- Insects are incredibly biodiverse
- Benefits / importance of insects
- Ways in which to protect our insects

Curriculum links

Subject: Natural Science and Technology Grade 4
Strand: Life & Living & Structures
Topic: Structures for animal shelters

Subject: Natural Science and Technology Grade 4
Strand: Life & Living & Structures
Topic: What plants need to grow

Subject: Natural Science and Technology Grade 5
Strand: Life & Living & Structures
Topic: Plants and animals on Earth (biodiversity, interdependence, animal types)

Subject: Natural Science and Technology Grade 7
Strand: Life & Living & Structures
Topic: Biodiversity

Subject: Life Skills Grade 5
Strand: Personal and Social Well Being
Topic: Health and Environmental Responsibility – safety measures at home and the environment
Strand: Creative Arts (role play action only)
Topic: Improvise and create (pair role play and improvisation on environmental issue)

Outcomes

Know

- What biodiversity is and why it is important (optional)
- What insects are, why they are important and why they need to be protected
- Ways in which we can protect our insect species

Do

- Actively do something to protect insects in the community
- Skills obtained from action projects and activity based learning in the lesson plan e.g listening, acting

Value

- Believe that it is our responsibility to protect biodiversity with the focus on insect's
- Believe that without insects, humans will be unable to survive

LESSON PLAN

1. Introduction

THINGS TO REMEMBER BEFORE STARTING YOUR LESSON

- Introduce staff
- Outline of the day/what to expect
- Rules of engagement
- Safety brief
- Divide into groups if applicable

SETTING THE SCENE/TUNING-IN

Before starting your lesson and action project, you need to set the scene and give the learners context. Here are two optional activities that you can use, to do so.



TUNING IN TO BIODIVERSITY OPTION 1

ACTIVITY

STORYTELLING
KAI MAKES A NEW FRIEND AND KISSES A FROG

DURATION

15 minutes

RESOURCES

Kai & Friends Book – All Things Bright and Beautiful

CURRICULUM LINK

Subject: Natural Science and Technology

- **GRADE 4**
  - » **Strand:** Life & Living & Structures
  - » **Topic:** Animal Habitats
- **GRADE 5**
  - » **Strand:** Life & Living & Structures
  - » **Topic:** Plants and Animals on Earth (biodiversity, interdependence, and animal types)

Read the All Things Bright and Beautiful, Kai Kisses a Frog story from the book.

1. **Paragraph 2** end – ask all the kids to pretend to be Kai and mew very loudly to call mom.
2. **Paragraph 5** – ask kids to pretend to take a deep breath and sniff in all the fragrance of the flowers.
3. **Paragraph 8** ("She hopped out of the arum lily…") – ask the kids to all hop out of the arum lily like the frog. You can ask them to make a sound of a fr og as well.
4. **Paragraph 17** (…a large butterfly fluttered down from the treetops…) – ask the kids to flap their arms like a butterfly flying in and landing.
5. **Paragraph 29** (…Bulumko flew off into the sun) – let children flap their arms again like Bulumko.
6. **Paragraph 30** (……one last whiff of the magnificent fragrance of my home..) – let kids take another pretend sniff of the flower.

Once the story is finished, explain some things to the children and ask some questions:

1. **Explain.** Kai, Bulumko and Asha the frog are all different. This is known as diversity. Would it not be a boring world without different animals and plants? You can use an example of only being able to eat cabbage every day.
2. **Question.** What does BIODIVERSITY mean?

   Answer. Biodiversity is the variety of life on Earth, in other words the different plants and animals we find on Earth. It also means the different habitats or homes like the different places that Bulumko the butterfly, Kai the leopard and the arum lily frog call home.
3. **Explain.** Different animals need different habitats. Animals need habitats for space to move, a place to reproduce, breathe, grow, feed and excrete.
4. **Question.** Pick an insect like Bulumko the butterfly from the story. What does he need from his habitat to survive?

   Answer. (can be written down by learners). He needs air to breathe, clean water, nectar/rotten fruit to feed on, a place to hide from birds and frogs.
5. **Re-read or highlight** this paragraph, how special our province is and that many plants and animals that are found here are found nowhere else - "First of all, let me tell you how special the Western Cape is," said Bulumko. "It's home to the smallest but most diverse of the six floral kingdoms of the world. Half of the plant species in this province are endemic, meaning that they are found nowhere else in the world.

All things bright and beautiful:

KAI KISSES A FROG AND MAKES A NEW FRIEND

P1 One day, just as the sun was rising, Kai, the Cape leopard cub, and his brother and sister cubs came down to the river to drink.

P2 Kai, who found his brother and sister very irritating, decided he needed some time out, so he asked his mom for permission to stay a bit longer. "Yes," replied his mom, "but make sure to return before the other animals come down to drink, and if there is any danger, mew very loudly."

P3 Bearing that in mind, Kai ambled by the river, watching the dragonflies dance in the water, stopping every now and then as he caught a glimpse of his reflection in the river. He once thought it was another cub, but his mom explained it was just a mirror effect.

P4 As Kai was daydreaming, he picked up the wonderful scent of something sweet and powdery and slightly spicy. He followed his nose until he found the source of this wonderful fragrance.

On the river's edge, was a cluster of long-stemmed trumpet-like white flowers. He rubbed his nose against the waxy softness. Making sure no one was

P5 watching him (like his brother or sister who would tease him forever), he closed his eyes and kissed the flower, dizzy with the wondrous scent that floated up his nostrils.



Note that all stop points in the story are marked as follows e.g. Paragraph 5 = P5

P6 "Oh my gosh!" came a high-pitched voice from the flower.

P7 "A talking flower," thought Kai, "how magical… maybe a new friend?"

P8 As Kai opened his eyes and looked into the flower, a small head with big eyes popped out of the flower.

P9 "Are you a frog?" asked Kai.

P10 "Oh yes, one of the daintiest, smallest, and most beautiful of all frogs. I'm Asha, the Arum lily reed frog," she quipped, waving her webbed foot and batting her very long eyelashes.

P11 "Hello Asha," said Kai, "the scent of the flower bewitched me. What a beautiful home you have!"

P12 "Yes," she agreed, "arum lilies are really beautiful and are often picked for weddings and funerals! Naughty, naughty! You need permission and sometimes even a permit to pick flowers or remove animals from nature! But, I have to make sure that I'm not at home when that happens. We lost our poor old uncle that way you know – the flower he was sheltering in was picked and he was never heard from again!"

P13 "How scary!" exclaimed Kai. "What is that long yellow spike inside the flower?"

P14 "It's called a spadix and it's the flower part of the arum lily that attracts pollinators like insects," said Asha, as she rapidly stuck her tongue out to catch a small insect for breakfast.

P15 She hopped out of the arum lily and landed next to Kai, close to the river. Kai told her about his home where he lived with his family and how it protected them from the weather and other predators.

"Oh, how different we all are!" exclaimed Asha, "but differences make for a good friendship. And you are such a handsome fellow with those bright blue eyes… I must admit, I'm a sucker for good looks."

P16 As Kai and Asha were chatting away, getting to know each other, a large butterfly fluttered down from the treetops. It was Bulumko, the wise forest emperor butterfly. His shiny blue wings glistened in the sunlight and Kai and Asha went silent, as he landed on a nearby reed.

P17 "Greetings my beautiful young friends," he said, his deep voice echoing across the river.

P18 "Tat'omkhulu", said both Kai and Asha, lowering their heads as a sign of respect.

P19 "I'm pleased you have both met," he said, "it's important to understand our differences and the important role each one of us plays in the environment."

P20 "Where do you live?" asked Kai politely.

P21 "Aah, I'm on my way home from a butterfly convention to one of the few bits of natural forest in the Western Cape, the Grootvadersbosch Nature Reserve, home of the forest emperor butterfly. Did you know that it's the only place where my species is found? So, it's rare to see me here, as I'm a passer-by and don't live in this area!"

P22 "Tell us more about where you live," said Asha, shyly lowering her eyelashes.



P23 "First of all, let me tell you how special the Western Cape is," said Bulumko.

P24 "It's home to the smallest but most diverse of the six floral kingdoms of the world. Half of the plant species in this province are endemic, meaning that they are found nowhere else in the world!"

P25 "So, all of us animals live in a very special place! To answer your question, Asha – my forest is home to nearly 35 forest tree species, including red alder, ironwood, stinkwood, and yellowwood,' said Bulumko, fluttering his wings.

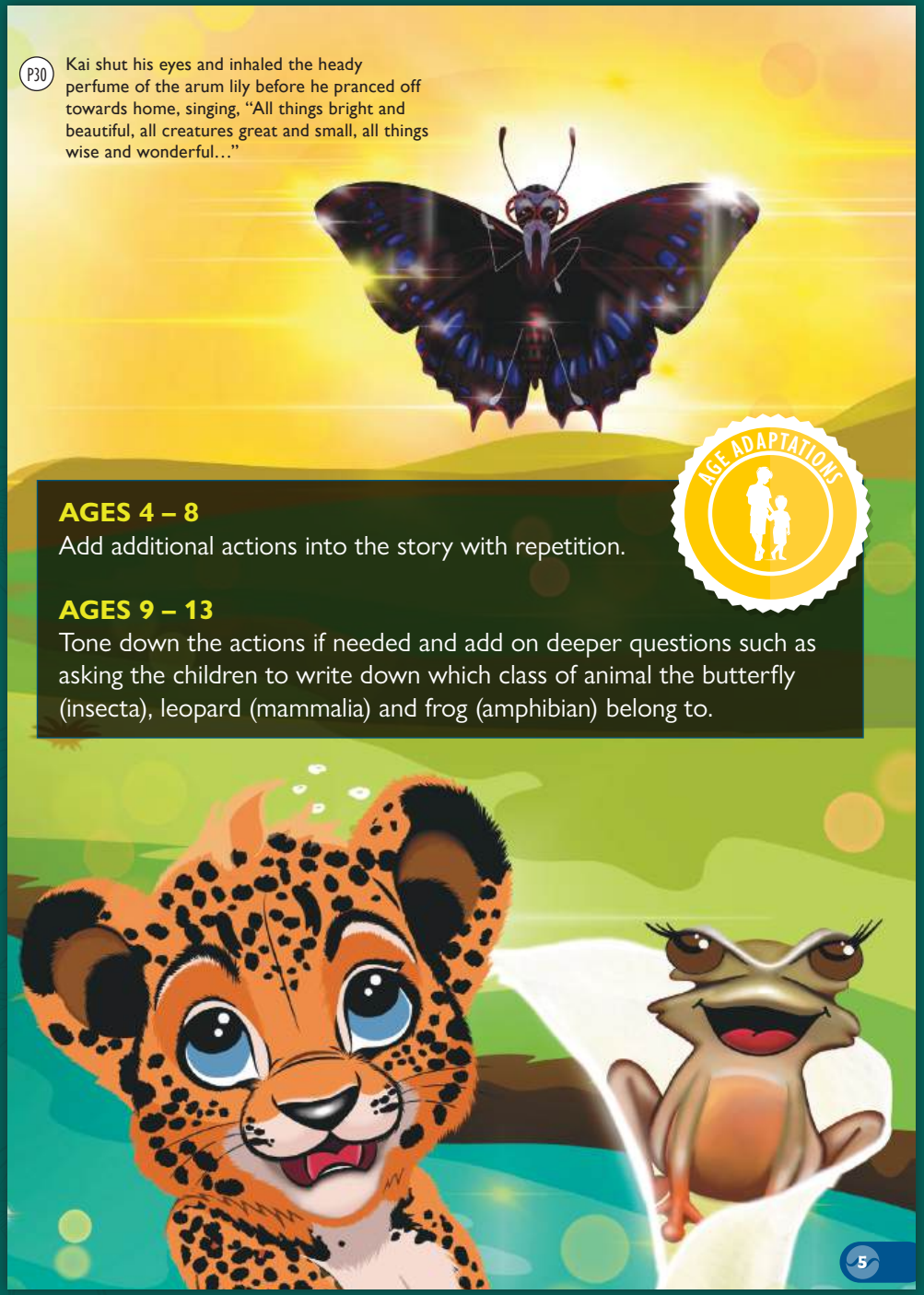
P26 "The forest is a good example of biodiversity because we have a wide variety of living organisms," added Bulumko, quivering his feelers. "There are around 200 bird species, as well as bushbuck, baboons and other small mammals, not to mention the very rare ghost frog, which might interest you, Asha?"

P27 "Well, it's time to get going and fly home before the sun rises in the sky,' he said, hovering above Kai and Asha.

P28 "Remember, dear children, how special our biodiversity is and that it's important to our survival. So, let's all work hard to protect our environments," said Bulumko, as he flew off into the rising sun.

P29 "Gosh, what a clever chap!" said Asha, as she plopped back into the arum lily. "Anyway, it's warming up now. You can have one last whiff of the magnificent fragrance of my home, before I have my morning nap."





TUNING IN TO BIODIVERSITY OPTION 2

ACTIVITY

MATCHING SHADOWS AND CLASSES

DURATION

10 minutes

RESOURCES

Kai & Friends Activity Book page copied per child

CIRRICULUM LINK

Subject: Natural Science and Technology

- **GRADE 5**
  - » **Topic:** Plants and animals on Earth – biodiversity, how they depend on each other, and different types of animals.
- **GRADE 7**
  - » **Topic:** Biodiversity – different types of vertebrate animals.

Ask the children to try and complete the sheet above from the Kai Activity Book.

Once the activity is finished explain some things to the children and ask some questions:

1. **Explain.** There are many different plants and animals on Earth, just like the ones in the activity. This is known as diversity. Would it not be a boring world without different animals and plants? You can use an example of only being able to eat cabbage every day.

2. **Question.** What does BIODIVERSITY mean?

   Answer. Biodiversity is the variety of life on Earth, in other words the different plants and animals we find on Earth. It also means the different habitats or homes like the different places that Bulumko the butterfly, Kai the leopard and the arum lily frog call home.

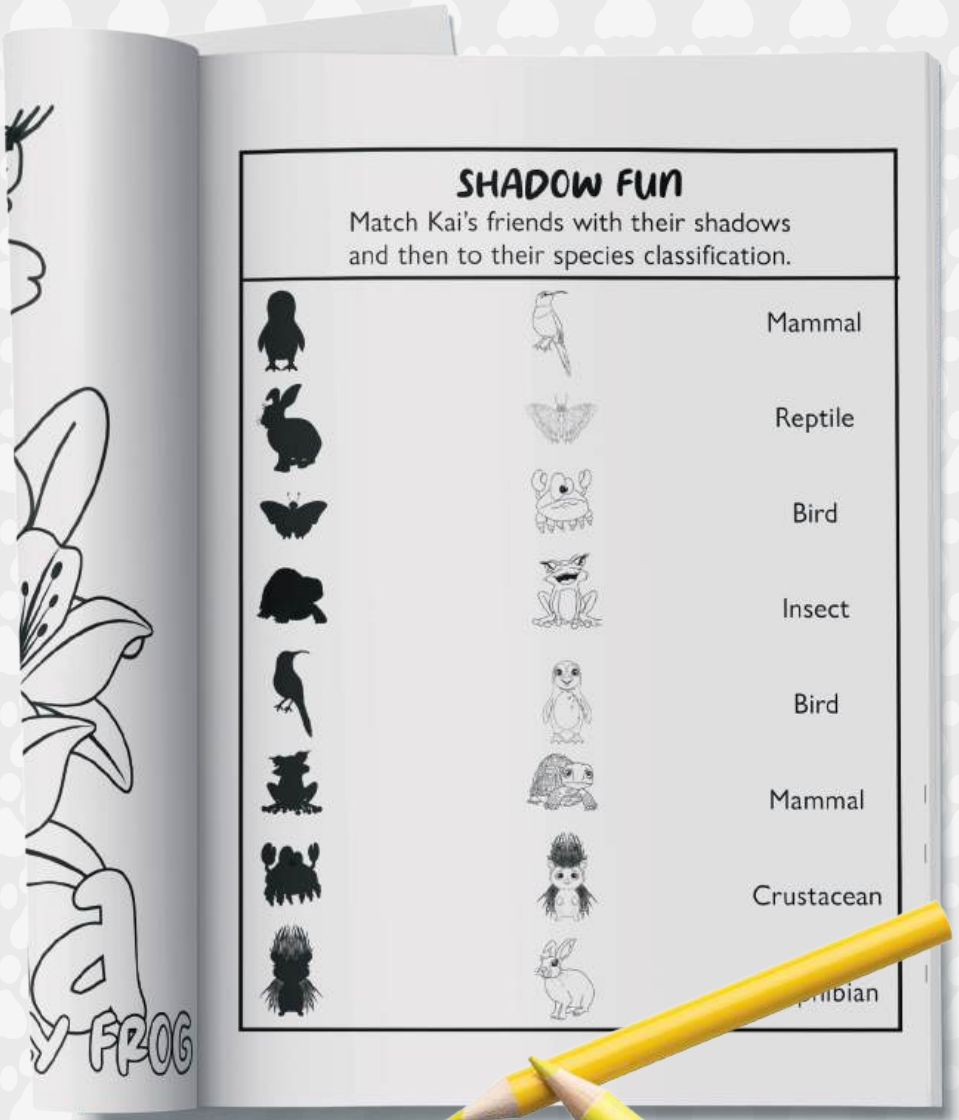
3. **Explain** that animals can be divided into two groups – animals without backbones (invertebrates) and with backbones (vertebrates). Vertebrates are further divided into five classes including fishes, amphibians, reptiles, birds and mammals.

4. **Go through the answers** to the activity and explain each class they found.

5. **Explain.** There are many plants and animals in the Western Cape that we find nowhere else on Earth. It is therefore important that we protect the biodiversity in our Province.

AGES 4 – 8
Use the silhouettes predominantly.

AGES 9 – 13
Use the classification of animals predominantly.



ACTIVITY

INTRODUCING INCREDIBLE INSECTS

DURATION

15 minutes

RESOURCES

No resources required

CURRICULUM LINK

Subject: Natural Science and Technology

- **GRADE 5**
  - » **Strand:** Life & Living, Structures
  - » **Topic:** Plants and animals on Earth – focusing on biodiversity, how plants and animals depend on each other (interdependence), and different types of animals.
- **GRADE 7**
  - » **Strand:** Life & Living, Structures
  - » **Topic:** Biodiversity – specifically studying the different classes of vertebrates (animals with backbones).

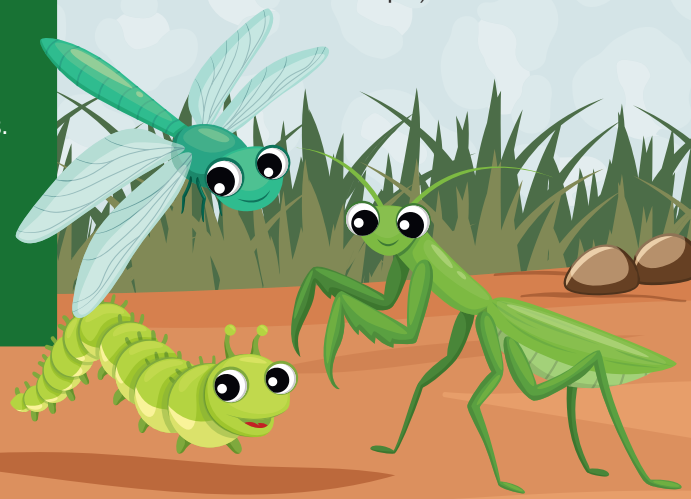
1. **Explain** to learners that insects are one of the many types of animals we get on Earth. The diversity of plants and animals is called biodiversity (the variety of plants and animals on Earth). Animals can be divided into two groups – animals without backbones (invertebrates) and with backbones (vertebrates). Vertebrates are further divided into five classes including fishes, amphibians, reptiles, birds and mammals. Insects are invertebrates and they come in many shapes and sizes with a large diversity.

   Just within the class of Insecta we get many different types – all shapes and sizes.

2. **Ask learners** to write down one type of insect and what they think the benefit may be to us. Ask some of them to share their answers. Some answers could include: Pollination: Bees, butterflies, and other pollinators help plants reproduce by transferring pollen. Pest control: Ladybugs and predatory beetles keep harmful pest populations in check. Soil health: Earthworms and other organisms enhance soil structure and nutrient cycling.

3. **Ask the learners** to think about what would happen if all the insects on Earth disappeared. Pose the question to them. Re-iterate that without insects, we would get none of the benefits, so it is important to protect them.

4. **Explain** that today's action project helps protect or encourage the growth of insect populations – without which, we would cease to exist (using no pollination = no food as an example)



2. Action Projects

Ensure to consult your newsletter for point allocations for each activity. Any number of activities below may be completed and is entirely optional. The more projects that are completed, the more points your group will earn.

ACTIVITY

ACTION PROJECT 1 -
BUILDING AN INSECT HOTEL

DURATION

1 hour to 8 hours (depending on complexity)

RESOURCES

You will need a place to build your insect hotel as well as materials to build it. This can range from pipes, bricks, sticks, dried grass, hollow plant stems, strings, wire – depending on the size and complexity of your hotel. If you are building a hotel with a frame – a drill, screws and hammer may be needed. Optional art supplies like paint can be used for decorating your hotel.

POINTS

Your group will earn 150 points for building a very simple and 250 points for a complex insect hotel

EVIDENCE

Post a picture of your group with their insect hotel

AGE ADAPTATIONS

AGES 4 – 8
Have pictures of insects with their names and benefits on it. Ask learners to read and share.

MIXED AGES
Older children can write down the insect and the younger child can draw it.

CIRRICULUM LINK

Subject: Natural Science and Technology

- **GRADE 4**
  - » **Strand:** Life & Living, Structures
  - » **Topic:** Structures for Animal Shelters

To make this action project more aligned with the curriculum, ask learners to design and draw an insect hotel based on the insects they want to attract.

In their design, they should:

- Identify the target insects the hotel is built for.
- Explain how the hotel will provide shelter, fresh air, a safe space for reproduction, and a place for young insects to grow.
- List the materials they will use and explain why those materials are suitable.
- Label and describe each part of the insect hotel and its purpose.
- Include the size of the different parts in their drawing.

To build an insect hotel, choose a location near the plants you wish to protect and pollinate. Gather natural materials such as stems, twigs, sticks, dry leaves, moss, wood chips, and old bricks. Build the hotel structure using the collected materials. Place the insect hotel in a sheltered area close to nectar-rich flowers.

For a simple hotel, collect handfuls of stems, twigs and sticks from the ground – make sure to leave plenty behind for the wildlife. Tie the bundles of stems, twigs and sticks in two places. Add any items that create a space for insects to hide. Push everything into a sheltered place.

For a more luxurious insect hotel, make a wooden frame, fixing the wood with screws or nails. Fill the frame with stems, twigs and other items. You can even decorate your frame with paint or other materials.

Get ready to welcome your insect guests!






BUG Hotel
Happy Toddler Playtime


BUG HOTEL


anphibians
Straw and grass for lacewings
spiders
Bees and ladybirds
lady bugs
www.playfullearners.co.uk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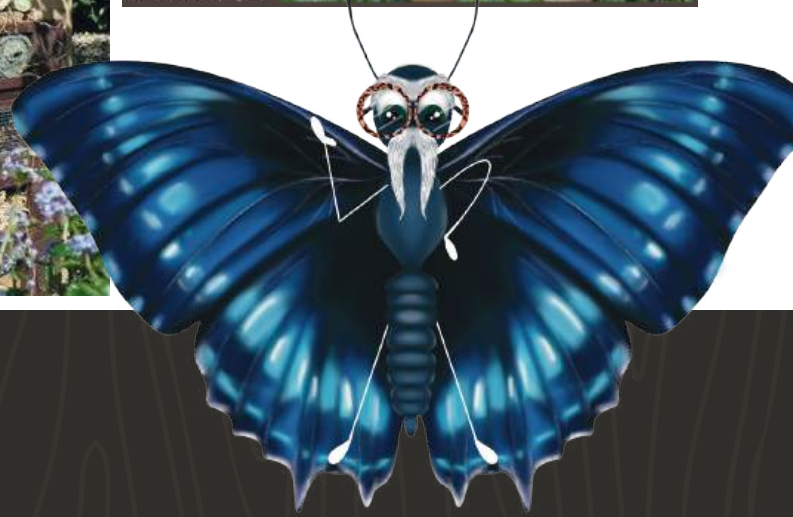
DIY
Bug
House




Make a...
mini-beast mansion
The different habitats offered by a mini-beast mansion will attract a real variety of creatures to your garden. In return they might even keep the pests away.
straw, hay, dead woods and dry sticks
nectar rich potted plants
upside down plant pot
stones, bricks and old roof tiles
clay drainage tubes
fir cones, dry leaves and bits of bark
bundles of garden canes
Why not send in a photo of your mini-beast hotel? For details go to bbc.co.uk/wildaboutyourgarden



ACTIVITY

ACTION PROJECT OPTION 2 -
PLANT INDIGENOUS INSECT ATTRACTING TREES, PLANTS, FLOWERS OR VEGETABLES

DURATION

30 minutes to 8 hours (depending on complexity)

RESOURCES

A spade and seeds have been provided in your support toolbox. The remaining resources would depend on your preference and may include a planter box, trees, seedlings and soil.

POINTS

Your group will earn 100 points for planting a tree an indigenous tree, flowers or shrub or starting simple veggie garden. For a complex garden or veggie garden planted, earn your group 200 points



EVIDENCE

Submit a picture of your group before and after the tree or garden was planted (show the tree or garden in your pictures)

CURRICULUM LINK

Subject: Natural Science and Technology

- **GRADE 4**
  - » **Strand:** Life & Living, Structures
  - » **Topic:** What Plants Need to Grow

To make this activity more curriculum-friendly, ask learners to think about what a tree, flower, or seed needs to grow and survive.

Key points to teach:
- Plants need light, water, and air to grow.
- Seeds need water and warmth to start growing.
- When a seed begins to grow, this process is called germination (introduce this as a new word!).

This approach will help learners understand the basic needs of plants in a simple and engaging way!

Plant a tree, a flower, or a vegetable garden. Set up a window box or planter in your backyard or at your community park (with permission, of course.) Just plant something. The more plants there are, the more bees will find food and a stable habitat. Every plant counts, so you can contribute by planting anything!

ACTIVITY

ACTION PROJECT OPTION 3 -
DO AN INSECT INSPIRED ROLEPLAY

DURATION

45 minutes to 90 minutes

RESOURCES

Props of your choice

POINTS

Earn your group 150 points for completing a role play

EVIDENCE

Submit a video of your role play

CIRRICULUM LINK

You can choose a role-play topic and level of difficulty that aligns with any curriculum mentioned at the beginning of this lesson plan.

Additionally, role-play can be connected to:

- **Subject:** Creative Arts (focusing on role-play action)
- **Strand:** Improvise and Create
- **Topic:** Pair role-play and improvisation based on an environmental issue

This allows learners to explore real-world problems creatively while developing their acting and improvisation skills.

Assign a role to each child in the group and prepare a roleplay about insects. Some role ideas include beekeeper, nature conservation official, mayor, lady that kills insects, person that uses bug spray, child stung by bee, tree, vegetable, ant, earthworm, bee, praying mantis. Some topic ideas include the benefits of insects, the threats to the planet in the face of declining insect numbers and how we can protect insects. Come up with a fun name for your play, record it and send it to us! Simple as that. We suggest the role plays be as impromptu as possible and be between 2 and 5 minutes.



ACTIVITY

ACTION PROJECT 4 -
MAKE INSECT FRIENDLY HOSEHOLD PRODUCTS

DURATION

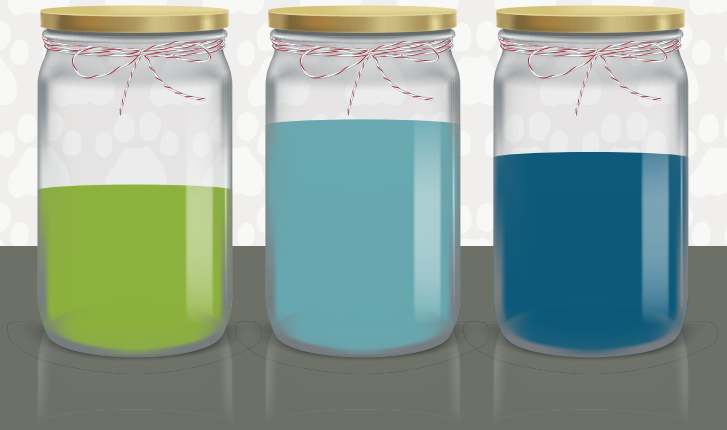
30 minutes

RESOURCES

Re-usable containers for children to mix their cleaners in (ask children to bring cleaned out containers like coffee containers, margarine containers, ice cream containers etc. Anything that can hold a liquid, has a wide opening and a lid will do), natural products like vinegar (kills bacteria, cuts grease and kills mildew), baking soda (scrubs without scratching) and lemon juice (removes mildew, cleans grease and leaves a citrus scent), spoons for mixing, items to test the cleaning products on, cloths to clean

POINTS

Your group will earn 50 points for each recipe mixed



EVIDENCE

Submit a picture of your product and the recipe used

CIRRICULUM LINK

Subject: Life Skills

- **GRADE 5**
  - » **Strand:** Personal and Social Well-Being
  - » **Topic:** Health and Environmental Responsibility – Safety at Home and in the Environment

Many household cleaning products contain harmful chemicals that can be dangerous to insects and the environment. By using natural cleaning products, we can help protect nature while keeping our homes clean in a safer, eco-friendly way.

Here's how to make simple, natural cleaners:

1. Choose a recipe (two examples are provided below).
2. Mix the ingredients as a group.
3. Test the cleaner on a surface so learners can see that it works!

» **Key lesson:** Encourage learners to understand the benefits of using environmentally friendly cleaning products and how small changes can help protect the planet.

ALL PURPOSE CLEANER

2 Cups of hot water, add 3 tablespoons of vinegar, 1 teaspoon enviro-friendly dishwashing liquid. Mix well.

STAIN REMOVER

Combine lemon juice and baking soda in equal parts to remove tough stains.

ACTIVITY

ACTION PROJECT OPTION 5 -
VISIT A RESERVE OR NATURE AREA AND RECORD THE FINDING ON I-NATURALIST

DURATION

1 hour to 5 hours

RESOURCES

Magnifying glass provided in support box. Binoculars provided in support box. i-Naturalist App on a phone or phones with a camera.

POINTS

Your group can win 200 points for participating.



EVIDENCE

Submit a picture of your group during the challenge as well as a picture/screenshot of one of the items entered and submitted onto the App.

CURRICULUM LINK

Subject: Natural Science and Technology

- **GRADE 7**
  - » **Strand:** Life & Living, Structures
  - » **Topic:** Biodiversity

To make this lesson curriculum-friendly, have learners classify each plant or animal they identify using the following categories:

1. **Main Group:** Is it a **Plant, Animal, Fungi, Bacteria, or Protista?**
2. **Plants**: Is it a **Gymnosperm** (cone-bearing) or an **Angiosperm** (flower-bearing)?
3. **Animals:** Is it a **Vertebrate** (has a backbone) or an **Invertebrate** (no backbone)?
4. **Vertebrates:** If it's a vertebrate, classify it further into **Fish, Amphibians, Reptiles, Birds, or Mammals** using the guide provided (see next page).

This activity will help learners understand biodiversity by organizing living things into scientific groups in a structured way.

Visit any nature area and upload your findings onto the i-Naturalist App. We would like to see evidence of any insects you found.

KINGDOMS

BACTERIA
- microscopic
- may cause diseases
- single-celled

PROTISTA
- microscopic
- may cause diseases
- single-celled

ANIMAL
- multi-cellular
- move around
- feed off other living things

PLANT
- multi-cellular
- most don't move
- photosynthesise

FUNGI
- single/multi-cellular

VERTEBRATES
- animals with backbones

INVERTEBRATES
- animals without backbones

WITHOUT SEEDS
- mosses, ferns & some algae

WITH SEEDS

Other

CHORDATES
- have a spinal cord

MOLLUSCS
- soft bodied usually covered by a shell

ARTHROPODS
- hard outer covering
- jointed legs

GYMNOSPERMS
- cone bearing plants
- produce seeds in cones

ANGIOSPERMS
- flower bearing plants
- produce seeds in flowers

Other

INSECTS
- have 6 jointed legs
- have 2 feelers on the head

ARACHNIDS
- have 8 jointed legs

CRUSTACEANS
- have 10 or more jointed legs

MONOCOTYLEDONS
- adventitious roots
- no bark on stems
- parallel-veined leaves
- isobilateral leaves
- strap-like leaves

DICOTYLEDONS
- taproot system
- some stems have bark
- net-veined leaves
- dorsiventral leaves
- different shaped leaves

FISH
- live in water
- breathe with gills
- lay eggs in water
- slippery skin with scales

AMPHIBIANS
- young live in water and have gills
- adults live on land and have lungs
- lay eggs in water
- smooth soft skin

REPTILES
- lay eggs with soft shells on land
- breathe with lungs
- tough skin with dry scales

BIRDS
- have feathers & wings
- most can fly
- lay eggs with hard shells
- breathe with lungs

MAMMALS
- have skin with hair
- young usually develop inside mothers
- young are fed on milk
- breathe with lungs

3. Consolidation

Wrap up after your action project by reminding learners why the project they have completed is important to biodiversity and insects in general. Ask each participant to write down one thing that they have learned. They may only use one word to express what they learned e.g. insects, biodiversity. Let each of them read their word out loud. Younger children do not need to write down the word, they can just say it.

ACTIVITY

CONSOLIDATION OF BUG BUZZ PROGRAMME

DURATION

15 minutes

RESOURCES

Pen and paper (older children)



Notes





CapeNature

www.capenature.co.za

email: learning@capenature.co.za

CapeNature Cubs Club
Kids Conserving Nature

Cubs Club lesson plan for
LoveNature – Majestic Mountains

GROUPS

Use this lesson plan to support your action projects for this term.

Date

November 2025 to January 2026

Duration

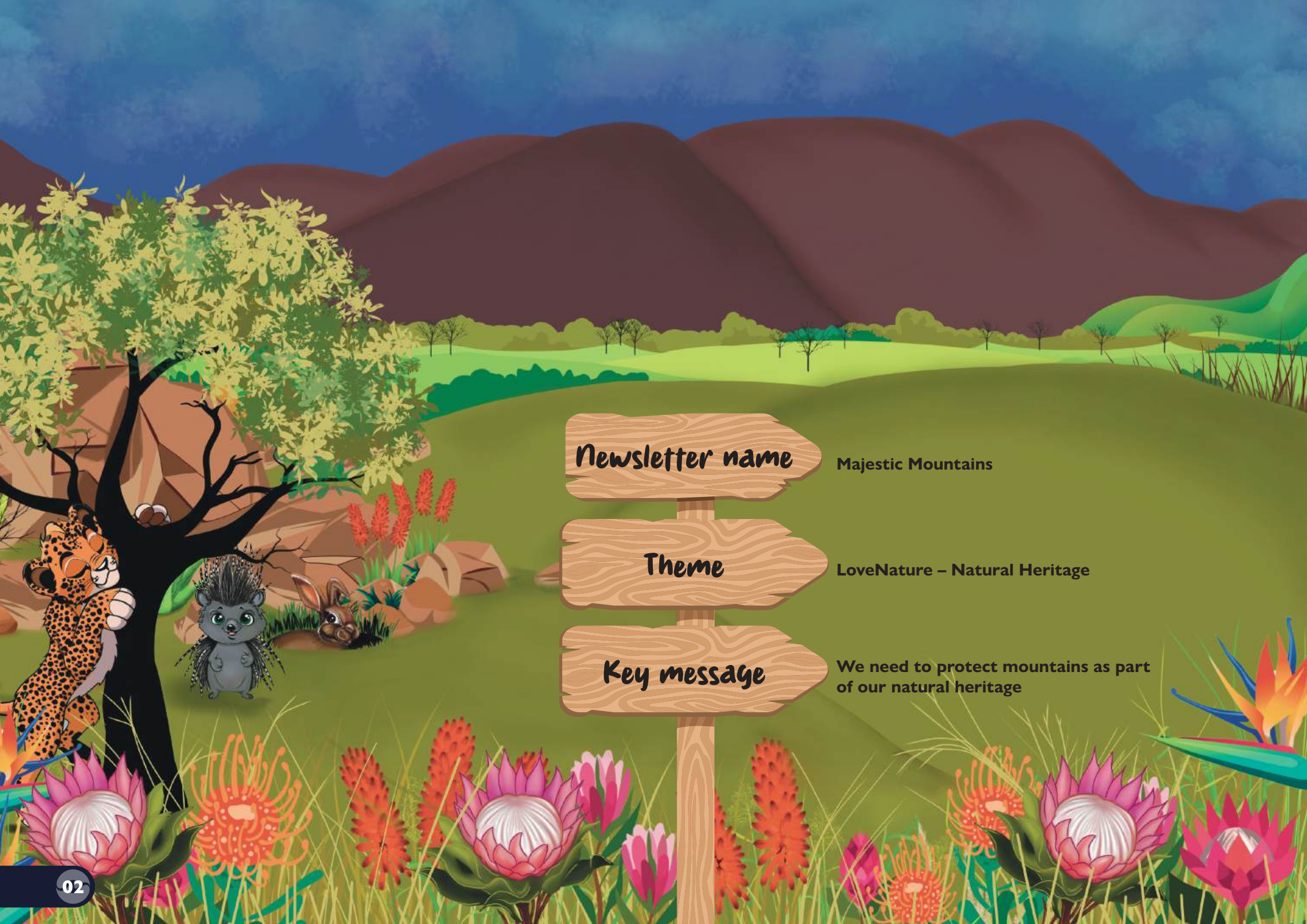
30 minutes to 8 hours (depending on projects selected)

Support material from toolbox

Whistle & binoculars for outings






Newsletter name
Majestic Mountains
Theme
LoveNature – Natural Heritage
Key message
We need to protect mountains as part of our natural heritage

Topics covered

Biodiversity and Natural Heritage (optional on programme)

- What biodiversity is
- What natural heritage is and why it is important

The importance of mountains

- How mountains fit into humanity – mountain facts
- Why mountain areas are important/value of mountain areas
- Why mountain areas need to be protected

Curriculum links

Subject: Social Science Grade 5
Topic: Physical Features of SA
Concepts: Mountain ranges, valleys, hills, rivers/

Location of physical features in the Western Cape/ Links between physical features (where people live) and what they do

Subject: Social Science Grade 4
Topic: Places People Live
Concept: People and their Needs

Subject: Natural Sciences and Technology Grade 5
Strand: Life and Living Structures
Topic: Fire Safety

Subject: Social Science Grade 4 & 6, Links to local history project or leader in history.

Outcomes

Know

- Mountains are important to our survival and well being
- At least one way in which mountains can be protected
- What biodiversity and natural heritage is

Do

- Actively do something to contribute to the natural heritage of mountains
- Skills from participation in action projects and activities (e.g. reading, explaining, describing, acting)

Value

- Believe that it is our responsibility to protect mountains
- Believe that it is our responsibility to protect our natural heritage

LESSON PLAN

1. Introduction

THINGS TO REMEMBER BEFORE STARTING YOUR LESSON

- Introduce staff
- Outline of the day/what to expect
- Rules of engagement
- Safety brief
- Divide into groups if applicable

SETTING THE SCENE/TUNING-IN

You want to teach the group a little bit about the importance of natural heritage, but the focus will be on mountain diversity. The Kai and Friends Fire Story can be used to bring in critical questions and thinking about our mountain biodiversity.



TUNING INTO BIODIVERSITY AND THE IMPORTANCE OF NATURAL HERITAGE OPTION 1

ACTIVITY
STORYTELLING
KAI AND HIS FRIENDS ESCAPE A WILDFIRE

DURATION
20 minutes

RESOURCES
Kai & Friends Book – Kai and his friends escape a wildfire, pen and paper for learners

CIRRICULUM LINK
Natural Science and Technology Grade 5 / Fire Safety

Read the Kai and his friends escape a wildfire story:

1. **Paragraph 5** end – ask learners to help Kai call Mony – M O T N T Y! M O N T Y!
2. **Paragraph 9** – ask learners to help Kai count down when he makes a mistake and leaves the number five out by accident – "Ok close your eyes and lets show Kai how its done…10, 9, 8, 7, 6, 5, 4 or up 1, 2, 3,4 …etc. "
3. **End of Paragraph 12** ….nostrils. Ask the learners if they can imagine Poki and Monty looking for Kai. Where do they think Kai lives? Is it flat or in the mountains? Briefly explain that Kai lives in the mountains.
4. **End paragraph 15** – Ask the kids to repeat the 3 things in a fire triangle – FUEL – in this case fynbos.
5. **Paragraph 22** – Ask the kids to jump on one leg like Kai would with a hurt paw.
6. **Paragraph 28** – Let the kids make the sound that Siya Makes EET EET…
7. **Paragraph 33** – ask the learners to help call and warn the other animals of the fire. E.g."Fire! Fire! Get yourself to a safe place!" Cup hands to mouth maybe.
8. **After paragraph 35** – ask the learners what they think would happen if all the plants and animals burnt. Steer the answers towards there would be no more plants and animals in the area. In this case, the mountain.
9. **At the end of the story explain** that all the plants and animals in the story – the variety of life on Earth – is known as biodiversity. Explain that without plants and animals like Kai, we would not have the resources needed for human life – food, medicine, clean water.
10. **Explain.** Nature has cultural and spiritual value. These spaces also offer us place to enjoy fun things like fishing, hiking, birding. Nature also has its roots in our history over time – these places have been here forever – long before us. For this reason, natural heritage is very important and it needs to be protected.
11. **Ask** the kids to close their eyes and imagine a world without any plants or animals. Let them write down on a piece of paper how that would change their life.



Note that all stop points in the story are marked as follows e.g. Paragraph 5 = P5

P9 "One, two, three, four, six, seven…," shouted Kai.

P10 'Nonsense, Kai, it's one, ttt-two, three, ffff-four, five, six…," corrected Monty.

P11 "Alright, whatever," replied Kai, "we're coming to get you, Poki!"

P12 As they were exploring every nook and cranny looking for Poki, the sun peaked over the eastern horizon, and they felt a strong wind stir the fynbos. Monty looked up and saw dark clouds of smoke billowing in the distance. Monty and Kai felt the wind blow hot against their fur as a bitter burning smell hit their nostrils.

P13 "Wh-wh-what's happening?" Monty asked, his long ears twitching with worry.

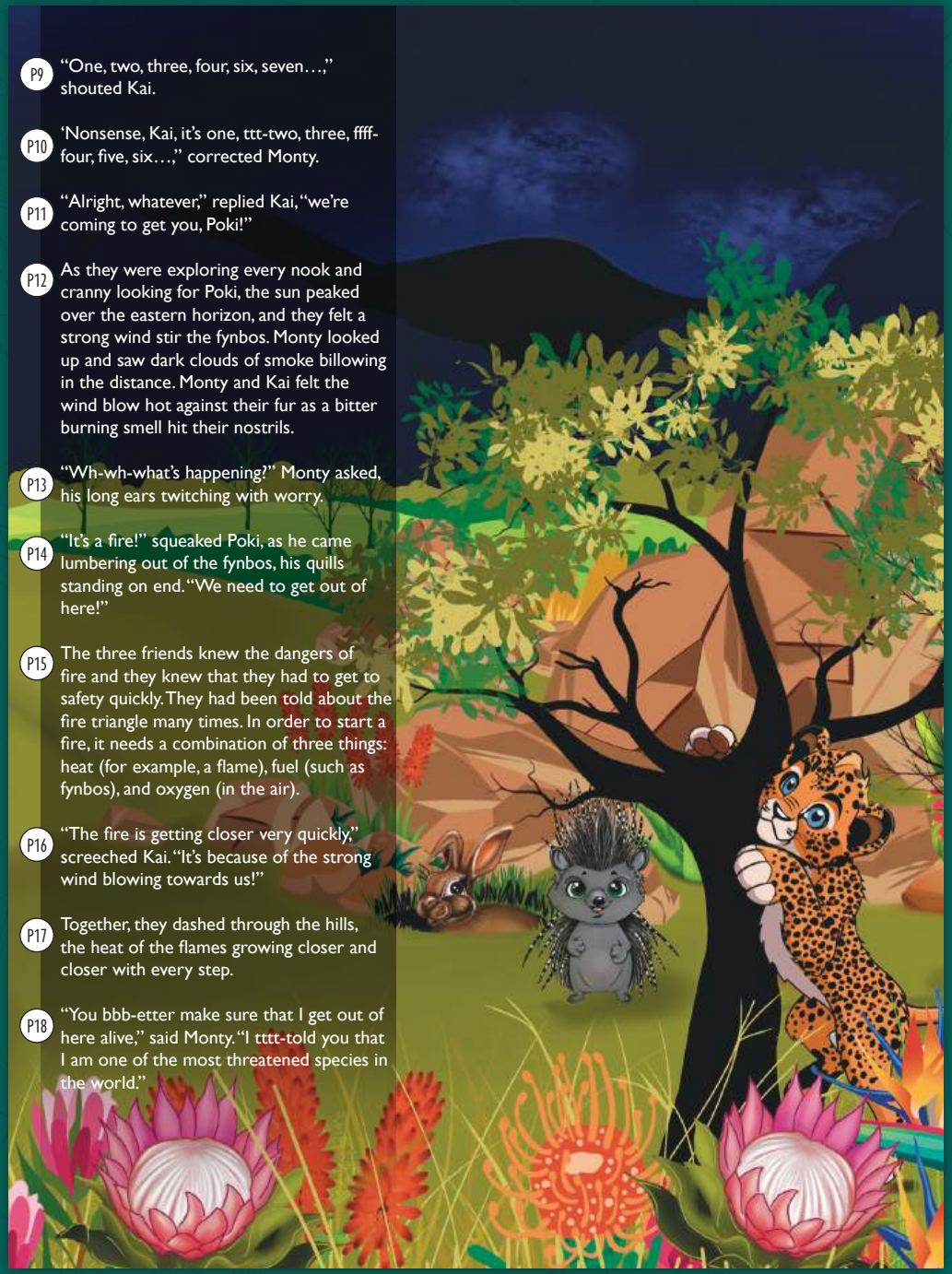
P14 "It's a fire!" squeaked Poki, as he came lumbering out of the fynbos, his quills standing on end. "We need to get out of here!"

P15 The three friends knew the dangers of fire and they knew that they had to get to safety quickly. They had been told about the fire triangle many times. In order to start a fire, it needs a combination of three things: heat (for example, a flame), fuel (such as fynbos), and oxygen (in the air).

P16 "The fire is getting closer very quickly," screeched Kai. "It's because of the strong wind blowing towards us!"

P17 Together, they dashed through the hills, the heat of the flames growing closer and closer with every step.

P18 "You bbb-etter make sure that I get out of here alive," said Monty. "I tttt-told you that I am one of the most threatened species in the world."



P19 "And I'm the largest porcupine and rodent in Africa," quipped Poki.

P20 "Tell that to my mom," yelled Kai, "…and she might eat you alive if we don't all make it!"

P21 But as they ran, Kai suddenly yelped in pain and stumbled. He had stepped on some burning cinders that the wind had blown into their path.

P22 "My paw! It's burning!" Kai cried, cradling his injured paw.

P23 Monty and Poki rushed to Kai's side, their hearts pounding with fear. "W-w- we have to keep moving, Kai," Monty urged, his nose twitching with urgency.

P24 "It hurts," Kai whimpered, tears welling up in his blue eyes. "I can't run." Poki pondered for a moment, then said, "Old chap, we'll help you! We'll all stick together and we won't leave anyone behind."

P25 Monty and Poki came up with a quick plan. Monty wrapped Kai's injured paw in a leaf and hopped under it, helping him to walk, while Poki, who moved surprisingly fast, used his quills to clear a path through the thick underbrush. They moved slowly but steadily, each friend supporting the other.

P26 As the fire roared closer, Poki was tiring, and Monty was sobbing from fear, while bravely hopping along, supporting Kai's injured paw. Kai was trying to be brave and live up to the meaning of his name: fighter, warrior, and protector of the earth.

P27 As they missioned on, they heard overhead the high-pitched warning call of their friend, Siya, the orange-breasted sunbird.

P28 "Eet-eet eet-eet dzeeu dueeu," he warbled, warning all his friends of the danger of the fire, and bidding them to follow him. Siya kept looping back, encouraging Kai and his friends to hurry up and stay close behind him.



P29 With their eyes watering from the heat and soot, they finally reached a clearing. There was a sand road ahead of them, next to a burnt area of fynbos.

P30 "Stay here, it's safe as there is no fuel for the fire to burn," shouted Siya, as he flew off to warn and guide the other animals.

P31 "W-w-we made it!" Monty exclaimed with relief.

P32 Kai's paw throbbed, but he nodded bravely. "We need to help Siya warn other animals about the fire. We can't let anyone else get hurt," he said, determination shining in his eyes.

P33 The three friends gathered their strength and began calling out to the other animals across the landscape, warning them of the approaching wildfire. The air echoed with their cries, and soon, other creatures joined in the effort to spread the word to move to a place of safety. As the fire raged through the fynbos, everyone huddled together on the sand road, comforting one another in the face of the danger.

P34 After what felt like an eternity, the crackling of the flames grew faint, and the air cleared of smoke. The once vibrant green hills were charred and blackened, but the animals were safe.

P35 Kai, Monty, and Poki looked around at the devastation, and all of their hearts ached for home. "The fire may be gone, but the damage it caused will take time to heal," said Poki solemnly.

P36 Monty nodded in agreement, his one ear flopping down. "W-w-we must remember today and the dangers of fire. We have to be c-c-careful and work together to stay safe."

P37 Kai thanked his friends for rescuing him. They all walked slowly home, thinking about how lucky they were to escape the wildfire. They had a great adventure to share with their families. For the first time they had experienced a real wildfire. They had learnt some valuable lessons about its dangers, as well as the strength of friendship.



Ages 4 – 8
Add additional actions into the story with repetition

Ages 9 – 13
Tone down the actions if needed and add on deeper questions

AGE ADAPTATIONS

TUNING IN TO BIODIVERSITY AND NATURAL HERITAGE OPTION 2

ACTIVITY

POEM WRITING OR DRAWING ABOUT NATURAL HERITAGE LOSS

DURATION

20 minutes

RESOURCES

Paper and pen or crayons/ coccis / color in pencils

CIRRICULUM LINK

Social Science Grade 4 / Topic: Places People Live / People and their Needs

1. **Explain** that all the plants and animals in the story – the variety of life on Earth – is known as biodiversity. Explain that without plants and animals like Kai, we would not have the resources needed for human life – food, medicine, clean water.
2. **Explain.** Nature has cultural and spiritual value. These spaces also offer us place to enjoy fun things like fishing, hiking, birding. Nature also has its roots in our history over time – these places have been here forever – long before us. For this reason, natural heritage is very important and it needs to be protected.
3. **Ask** the kids to close their eyes and imagine a world without any plants or animals. Ask each learner to write a short poem about a world without natural heritage.

Ages 4 – 8
Ask kids to rather draw a world without plants and animals. Use simpler language such as plants and animals and nature.

Ages 9 – 13
Use more complex language such as biodiversity and natural heritage

TUNING IN TO THE CONCEPT OF MOUNTAINS AS PLACES OF NATURAL HERITAGE

ACTIVITY

INTRODUCING THE IMPORTANCE OF MOUNTAINS

DURATION

15 minutes

RESOURCES

Map

CIRRICULUM LINK

Social Science Grade 5 / Topic: Physical Features of SA / Concepts: Mountain ranges, valleys, hills, rivers / Location of Physical features in the Western Cape / Links between physical features (where people live) and what they do

Social Science Grade 4 / Topic: Places People Live/ People and their Needs

Explain to learners why mountains are important, giving some interesting facts and asking some questions about the infographic provided. Ask the learners how they think mountains are important to them and how they think they can be protected.

Use percentages for older children and even ask them to write it down. For younger children, convert the % or fractions to an understandable measurement like "one out of five vs 1/5" or "one in six/seven vs 15%". You can even demo the percentages using kids e.g. ask 7 of them to come up and ask 1 to stand aside to show how many people live in mountains.



Mountains cover **ONE FIFTH** *of the earth's land surface*



Mountains occur in **75%** *of the world's countries*

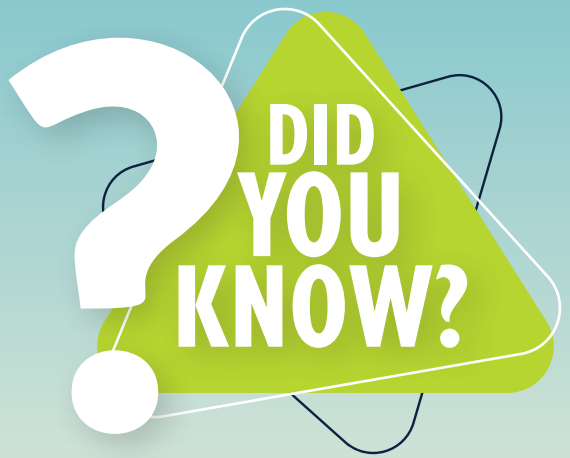
REASONS WHY PEOPLE VISIT MOUNTAINS:

- *Climate*
- *Clean air*
- *Unique landscapes*
- *Scenic beauty*
- *Land adventure sports*
- *Fresh water recreation*
- *History*

2nd *most popular tourism destination after coast and islands*

Provide **15-20%** *of the global tourism income*

Cover **24%** *of the worlds surface area*





A landform higher than **600m** is called a mountain, any lower, and it would be classified as a hill



Home to **25%** of the world's land animals



Provides fresh water for **more than ½** of humanity



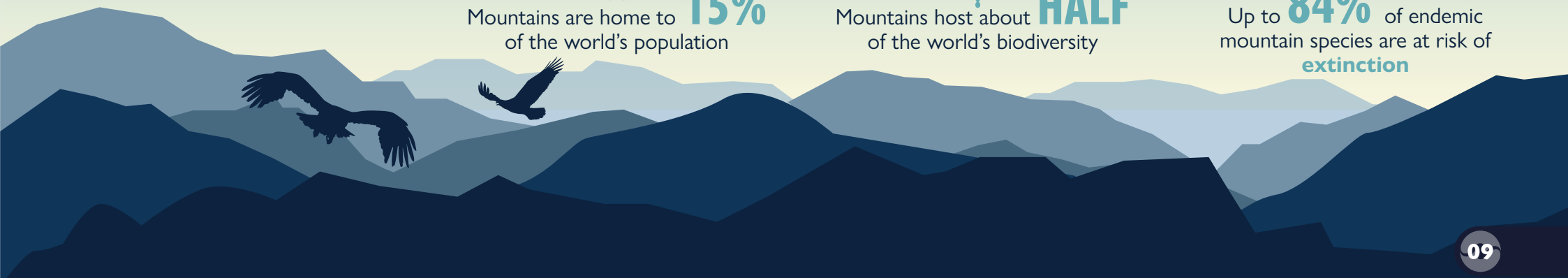
Mountains are home to **15%** of the world's population



Mountains host about **HALF** of the world's biodiversity



Up to **84%** of endemic mountain species are at risk of **extinction**



2. Action Projects

Ensure to consult your newsletter for point allocations for each activity. Any number of activities below may be completed and is entirely optional. The more projects that are completed, the more points your group will earn.

ACTION PROJECT OPTION 1
VISIT A MOUNTANOUS AREA

DURATION

30 minutes to 4 hours

RESOURCES

You will need to ensure you have all your gear for a hike / visit to nature. Take your whistle for safety and binoculars for spotting wildlife and looking at landscapes.

POINTS

Your group will earn 200 points for visiting a mountainous area

EVIDENCE

Submit a group picture of the group during the visit

CIRRICULUM LINK

None directly

Find a natural area that is mountainous. It is recommended that you participate in the tuning in sections on site, or even perhaps during a rest stop during a hike, and use the actual environment as a backdrop for the stories and questions in the activities. Some CapeNature Reserves you may want to consider visiting include Kogelberg, Hottentots Holland, Jonkershoek, Aasegaaibosch, Outeniqua, Cederberg. For more information visit ***www.capenature.co.za***



ACTION PROJECT OPTION 2
PARTICIPATE IN A STORYTELLING ACTIVITY ABOUT MOUNTAINS (ORAL HISTORY)

DURATION

1 to 2 hours

RESOURCES

No equipment will really be necessary. Children may want to research a story beforehand or use props to add some flair

POINTS

Your group will earn 150 points for participating in an oral history storytelling exercise about mountains

EVIDENCE

Submit a picture of the learners during the storytelling exercise

CIRRICULUM LINK

None directly

Ask the participants to sit in a circle and one by one tell a short story about mountains. This can be something that they remember as a child, that they heard from a parent or imagined as a child that grew up in the mountains. They can even imagine being an animal in the mountains. The stories must be short and sweet (2 minutes – 5 minutes) and children can team up to tell the story. Children can be asked to do research on their story through books, orally with their parents etc. After each story, children can ask one or two questions per story.

An alternate is to give the children a short history lesson about something that happened in a mountain setting. Children can then re-tell the story – each taking a sentence or two, moving around the circle, and each adding on as they go. This is great for listening and group work skills.



ACTION PROJECT OPTION 3
COMPLETE A TIME TRAVEL EXPERIENCE ABOUT/IN A MOUNTAINOUS AREA

DURATION

3 to 8 hours (planning and re- dramatization)

RESOURCES

Items to dress up as part of the time travel experience

POINTS

Your group will earn 300 points for completing a time travel exercise.

EVIDENCE

Submit a picture or video of the time travel experience.

CIRRICULUM LINK

Social Science Grade 4 & 6, Links to local history project or leader in history.

Reference: Bridging Ages South Africa

The Time Travel Method is an educational method, using local heritage in a learning process, to create reflection on contemporary issues, and provide tools for community building. The goal is to promote learning, social cohesion and contribute to community building. It is a role-play / dramatization of a historical event, to create reflection on a contemporary issue, staged at a local site within the community. In this instance, the local dramatization should take place in a mountainous area.

To prepare, research local sites and stories and think about how you and the learners can re-dramatize an event in history. Following the research, an event scenario should be written, a fictional story in a certain year at a specific site. Once ready, assign learners their roles and think about costumes or other items that can bring the dramatization to life. Children can either choose their own characters or they can be assigned. Everyone participates in the dramatization – there is no audience. The dramatisation must take place in the area or close to where the historical event occurred.



Once the dramatization is over ask critical questions (use what is applicable or craft your own):

- If this was a conflict – what could have been done differently to resolve the conflict?
- How did the dramatization make you feel?
- How does this piece of history link to mountains? Did mountains play a role? What if no mountains had been there?

AGE ADAPTATIONS

If groups are mixed, younger children can get easier roles. They can even play an animal or object. Include simple questions for younger groups.

ACTIVITY

ACTION PROJECT OPTION 4
DESIGN A 3D POSTER ABOUT THE IMPORTANCE/ USES OF MOUNTAINS

DURATION

30 minutes to 2 hours

RESOURCES

You will need magazines, coccis, crayons, scissors, glue and other materials like empty egg cartons needed to craft a 3D poster. An A3 or larger cardboard will be required.

POINTS

You will earn 25 points per core use/important aspect that is reflected on the poster e.g. provides drinking water. You will earn between 25 and 200 points, depending on the complexity of the poster.

EVIDENCE

Submit a video or pictures of the poster. Include top and side views

CIRRICULUM LINK

Social Science Grade 5 / Topic: Physical Features of SA / Concepts: Mountain ranges, valleys, hills, rivers / Location of Physical features in the Western Cape / Links between physical features (where people live) and what they do (vague link) / Social Science Grade 4 / Topic: Places People Live / People and their Needs

Using any material, create a 3D poster about mountains and why they are important.





3. Consolidation

Wrap up after your action project by reminding learners why the project they have completed is important to ensure all our mountains are protected into the future. Ask each participant to name one way that they will make sure that mountains are protected. They must each say or write down one thing they will do differently at home after the day, to protect mountains. Examples: tell others that mountains are important, don't litter, report fire etc. Ask some of the learners to share their ideas. Younger children do not need to write down the promise.

ACTIVITY

MAGNIFICENT MOUNTAINS CONSOLIDATION

DURATION

15 minutes

RESOURCES

Pen and paper (older children)





CapeNature

www.capenature.co.za

email: learning@capenature.co.za

CapeNature Cubs Club
Kids Conserving Nature

GROUPS

Cubs Club lesson plan for catchment to coast: water watchers

Use this lesson plan to support your action projects for this term.

Date

Febuary 2026 to April 2026

Duration

Between 1 hour and 1 day (depending on projects selected)

Support material from toolbox

Mini-SASS tub and magnifying glasses





Newsletter name Water Watchers

Theme Catchment to Coast - Water

Key message We need to save water for our futures

Topics covered

Catchment to Coast (optional on programme)

- Water sources are connected
- Water pollution (Soluble and insoluble substances/things that pollute water)

Water scarcity

- Concept of water scarcity and finite resources
- How our water sources can be protected
- The water cycle is covered in a few of the action projects

Curriculum links

Subject: Natural Sciences and Technology

Grade 6

- **Strand:** Mixtures and Water Resources
- **Topic:** Water Pollution

Grade 4

- **Strand:** Life and Living
  - **Topic 1:** What Plants Need to Grow
  - **Topic 2:** Structure of Plants

- **Strand:** Matter and Materials
- **Topic:** Materials Around Us – The Water Cycle

Outcomes

Know

- Water is scarce and a finite resource
- Two new ways that water can be saved
- What happens upstream, affects all our waterways, including the ocean

Do

- Actively do something to save water
- Skills from participating in activities e.g. listening, reading

Value

- Believe that it is our responsibility to protect our water sources
- Believe that our water is irreplaceable and that without it, humans will be unable to survive

LESSON PLAN

1. Introduction

THINGS TO REMEMBER BEFORE STARTING YOUR LESSON

- Introduce staff
- Outline of the day/what to expect
- Rules of engagement
- Safety brief
- Divide into groups if applicable

SETTING THE SCENE/TUNING-IN

You want to teach the group a little bit about the catchment to coast concept, but the focus will be on water scarcity and saving.



TUNING IN TO THE CATCHMENT TO COAST CONCEPT OPTION 1

ACTIVITY

STORYTELLING
KAI HELPS HIS FRIEND CLEAN THE BEACH

DURATION

20 minutes

RESOURCES

Kai & Friends Book – Kai helps his friend clean up the beach

CIRRICULUM LINK

Natural Science and Technology Grade 6 / Strand: Matter and Materials / Topic: Water pollution

Read the Kai helps his friend clean up the beach story:

1. **Paragraph 2** end – ask learners to help Kai's mom wake him up by giving a growl.
2. **Paragraph 5** – ask learners to show you how Kai could stalk Curtis now that he spotted him and then pounce on Curtis! You can halve the class or let them divide into pairs, one stalking the other. Those being stalked like Curtis can, crawl sideways.
3. **Paragraph 14** – READ TWICE and ask the learners how they think all the rubbish ended up on the beach with Curtis.
4. **Paragraph 20** – ask some of the learners to pretend to be Curtis and show us how he would be running to get his litter and get it in the trash. Then ask how you think the animals in the ocean would feel if the plastic entangled them. Let the learners cry.
5. **After the story** ask learners how they think water like the ocean becomes polluted. Start with in the home. If they think of their homes and all the things they flush down the drain or the sink, like dirt after having a bath or the dirt off a plate of food when washed. This water finds its way down the pipes to underground sewer pipes and then to a wastewater treatment plant. Here the water is treated and is eventually released back into the environment. Other things that pollute water include soap, car shampoo, grass, leaves, oil poured into water. What else can the group think of?
6. **Explain** again that in nature water flows from the top of the mountains down streams into rivers and eventually makes its way into the ocean. This is known as catchment to coast – and it also means that whatever pollution like litter or pollution from factories etc. enters the water inland, will eventually end up in the ocean. Use Kai's home in the mountain as an example. If people living near a mountain for example threw litter out the car window, the wind could pick it up and it could travel and end up in a river near where Kai lives. Maybe a butcher discards offal behind his stall and when it rains the water carries the blood to the river. Maybe someone who has made fish and chips throws the cooking oil down the drain – it will end up in the river. This polluted water would then move all the way down the mountain all the way to the beach where Curtis lives.



KAI AND HIS FRIEND

help clean up the beach

P1 One day, as Kai, the leopard cub, was lying on his back, warming his full tummy in the sun, he was thinking about the class he had attended with his mom, brother, and sister the previous day. It was about survival, the importance of helping your friends and caring for your environment. It all sounded a bit boring, far-fetched and un-adventurous! His mom had caught him dosing off in class.

P2 "Wake up, Kai!" reprimanded his mom, "For homework, you can show us how helping a friend can help save the environment and our lives."

P3 Kai was not sure where to start. He decided that it would be best to talk to his clever friend, Curtis the ghost crab, who was quite brainy (as well as bossy), and always loved to come up with a good plan.

Note that all stop points in the story are marked as follows e.g. Paragraph 5 = P5



P4 It was early morning, and Kai pranced off down the hill all the way to the small beach. He knew that Curtis enjoyed snacking on the shoreline before all the visitors arrived. He looked around but Curtis was hard to spot as he was a pale colour, similar to the sand, and he loved burrowing away, hiding from predators and the sun.

P5 "Hey Curtis," yelled Kai, as he spotted him racing sidewards across the beach. "What's for breakfast?"

P6 "Goodness, Kai, you nearly scared the shell off me", grumbled Curtis. "Don't practice your stalking techniques on me again! I'm having a delicious white mussel and sea lettuce sandwich. I couldn't find any turtle eggs this morning."

P7 "Well, I've told you not to eat turtle eggs! They are very rare, although I know they're a delicacy for you! Sorry I scared you, Curtis," said Kai, as he put his head on his paws, "but I'm in trouble and need your help."

P8 Kai shared his story with Curtis, who scratched his shell with one pincer and completed a 360 degree swivel with his beady eyes that stood out on stalks.

P9 "Well," said Curtis, "there is a beach clean-up later during the day, which is part of a big campaign to keep our rivers, oceans, and beaches clean. See the posters in the parking lot that say 'Don't Be Trashy'. Not that you can read yet! See those clear plastic bags over there? They are for the beach clean-up."

P10

P11 "Trashy as in rubbish?" asked Kai, "but how are we going to help?"

P12 "Every time there is a beach clean-up, I like to play my part before it starts. I'm happy that I have a friend to share the load and fun with!" exclaimed Curtis.

P13 "But this doesn't sound like much fun to me? What's in it for us?" asked Kai.

P14 "If our environment is clean and there is no pollution, we all have safe, good quality water to swim in and drink," explained Curtis. "And everything is connected; if there is pollution in the rivers where you live, it will have a ripple effect on the ocean because the pollution moves with the flowing freshwater, all the way from high up in the mountains through streams, rivers, and estuaries, and eventually lands up in the ocean with me."

P15 "Wow", said Kai, "so if you pollute a river you will eventually be polluting the ocean?"

P16 "Yes, well done, you've got it," nodded Curtis.

P17 "Anyway, let's get started," shouted Curtis. "And this is what we'll do… you pick up all the big pieces of glass, paper, and plastic, and put it in piles over here. I will collect all the tiny items, like the bottle caps, bits of glass, and plastic, and put it in separate piles so that it can be recycled later."

P18 "And the winner will be the one who collects the most number of items," said Curtis, knowing that Kai was very competitive and loved a challenge.

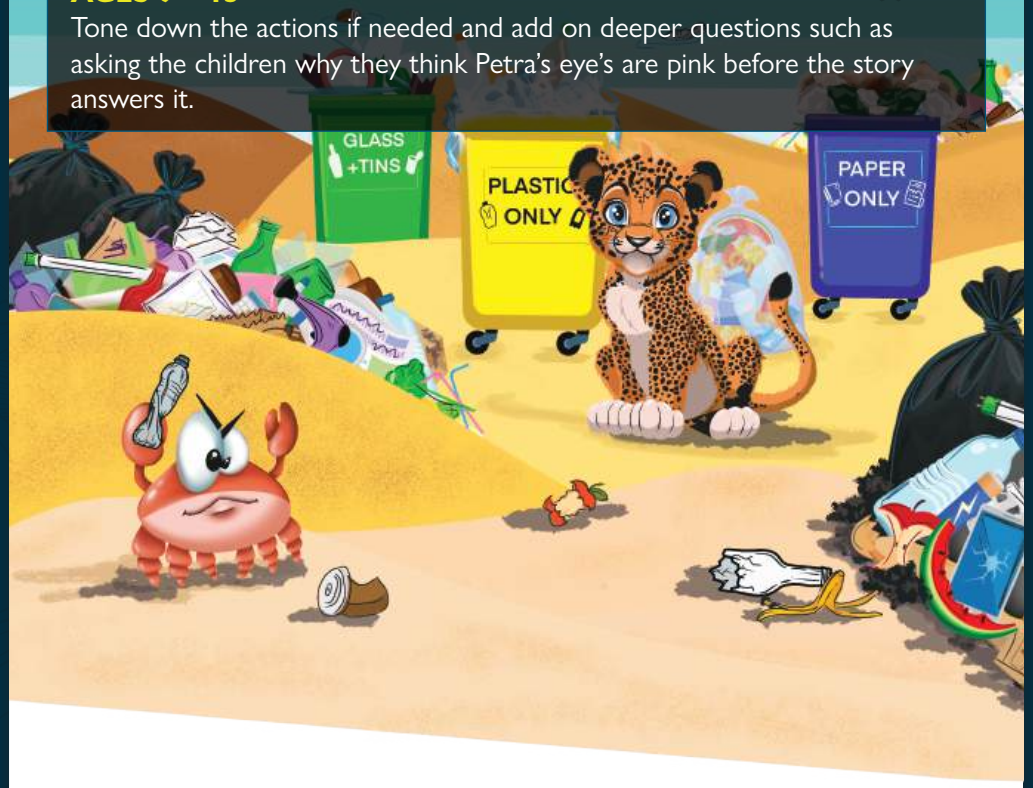
P19 Off raced Kai, tearing down the beach, collecting the bigger pieces of pollution in his jaws and dumping them in a pile.

P20 Meanwhile, Curtis raced crabwise, proud of his skills as one of the fastest crabs due to his flat body and long legs, grabbing the small items with his pincers and complaining as he went along at the amount of pollution on the beach. He knew that his friends living in the ocean could get entangled in this plastic, or even worse, they could eat it thinking it was food.



AGES 4 – 8
Add additional actions into the story with repetition.

AGES 9 – 13
Tone down the actions if needed and add on deeper questions such as asking the children why they think Petra's eye's are pink before the story answers it.



P21 "Does no one realise the damage these plastic bags do to the sea life," he muttered, "…and these sharp pieces of glass and cigarette butts that can harm the sea and land creatures, and pollute the water… how inconsiderate and dumb!"

P22 "I'm the winner! I'm the winner!" yelled Kai, as he pounced up to Curtis, stopping suddenly and showering him with sand.

P23 Two eyes emerged, as Curtis dug his way out of the sand and went to the piles of collected items on the beach.

P24 "Well done, Kai," congratulated Curtis, "you are indeed the winner! As first prize, you can rush up that sand-dune and roll down it as many times as you want. But you better be gone before all the people arrive. They won't know who has done all this good work of collecting and sorting all the pollution on the beach. I can't wait to see the expressions on their faces when they see this."

P25 Kai rushed off, eager for his reward and keen to get home to share his beach cleaning experience with his mom and siblings.

P26 Curtis, the crab, continued scouting for his breakfast, proudly repeating to himself, "I might be small, but I am very important! By burrowing and scavenging in this inter-tidal area, I contribute to its health and diversity."

THE CATCHMENT TO COAST CONCEPT OPTION 2

ACTIVITY

DEMONSTRATION
WATER POLLUTION DEMONSTRATION

DURATION

20 minutes

RESOURCES

Bucket of water & items to pollute the water

CIRRICULUM LINK

Natural Science and Technology Grade 6 / Strand: Matter and Materials / Topic: Water pollution, Natural Science



1. **Ask** learners how they think water becomes polluted. Start with in the home. If they think of their homes and all the things they flush down the drain or the sink, like dirt after having a bath or the dirt off a plate of food when washed. This water finds its way down the pipes to underground sewer pipes and then to a wastewater treatment plant. Here the water is treated and is eventually released back into the environment. Other things that pollute water include soap, car shampoo, grass, leaves, pesticides, oil poured into water. What else can the group think of?
2. **To demonstrate** and make the activity fun, you can optionally have a bucket of water and give each learner a chance to add something to the water, such as oil, sand, leaves, toothpaste, dishwashing liquid. Point out to the learners that some things dissolve in the water – these are soluble, and that some things don't dissolve, these are insoluble. Mix up the water and demonstrate how some things like "printing oil" mix with the water, while others like leaves, stay solid and dont dissolve into water. Explain the concept dissolve means that it becomes part of the liquid.
3. **Explain** that in nature water flows from the top of the mountains down streams into rivers and eventually makes its way into the ocean. This is known as catchment to coast – and it also means that whatever pollution like litter or pollution from factories etc. enters the water inland, will eventually end up in the ocean.
4. **Ask** them what would happen to people if we drank this polluted water. Answer: we could get sick.
5. **Explain** to learners that South Africa is a very dry country, and that water is actually quite scarce. We need to protect our water sources as well as save water where we can.



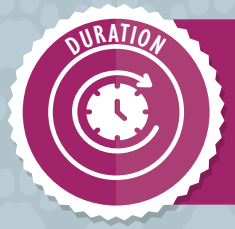
Ages 4 – 8
Use simpler language such as dissolves and does not dissolve/ or mix to become part of the water.

Ages 9 – 13
Use more complex language such as soluble and non-soluble.

TUNING IN TO THE CONCEPT OF WATER SCARCITY



INTRODUCING WATER SCARCITY IN SOUTH AFRICA



15 minutes

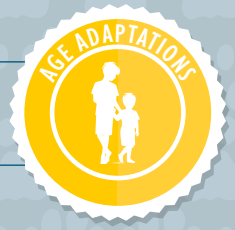


None



Links to curriculum in action projects below.

1. **Ask** them to name one or two ways in which they can protect the water in South Africa – help them along with some ideas if needed (e.g. don't litter, support conservation areas etc.)
2. **Ask** them to name one or two ways in which they can save water – help them with some ideas and explain if needed (e.g. water plants early morning or late afternoon when the sun is less intense, flush less, use a shower timer)
3. **Link** the above to the action project selected.



Older children could be asked to write down the water saving ideas and younger children to draw them if you have more time.

2. Action Projects

Ensure to consult your newsletter for point allocations for each activity. Any number of activities below may be completed and is entirely optional. The more projects that are completed, the more points your group will earn.



ACTIVITY

ACTION PROJECT OPTION 1
MINI-SASS ACTIVITY

DURATION

30 minutes to 1 hour

RESOURCES

You will need a flat container to scoop river/stream water into, a magnifying glass to identify insects, a net and a Mini-SASS chart to calculate the results (all of these items are provided for in the support toolbox). You will require a whiteboard marker or two to write down results onto the Mini-SASS forms.

POINTS

Your group will earn 200 points for completing the Mini-SASS activity (water quality test)

EVIDENCE

Submit a picture of the group with their completed Mini-SASS forms

CURRICULUM LINK

Subject: Natural Sciences and Technology Grade 6, Strand: Mixtures and water resources: Concept water pollution.

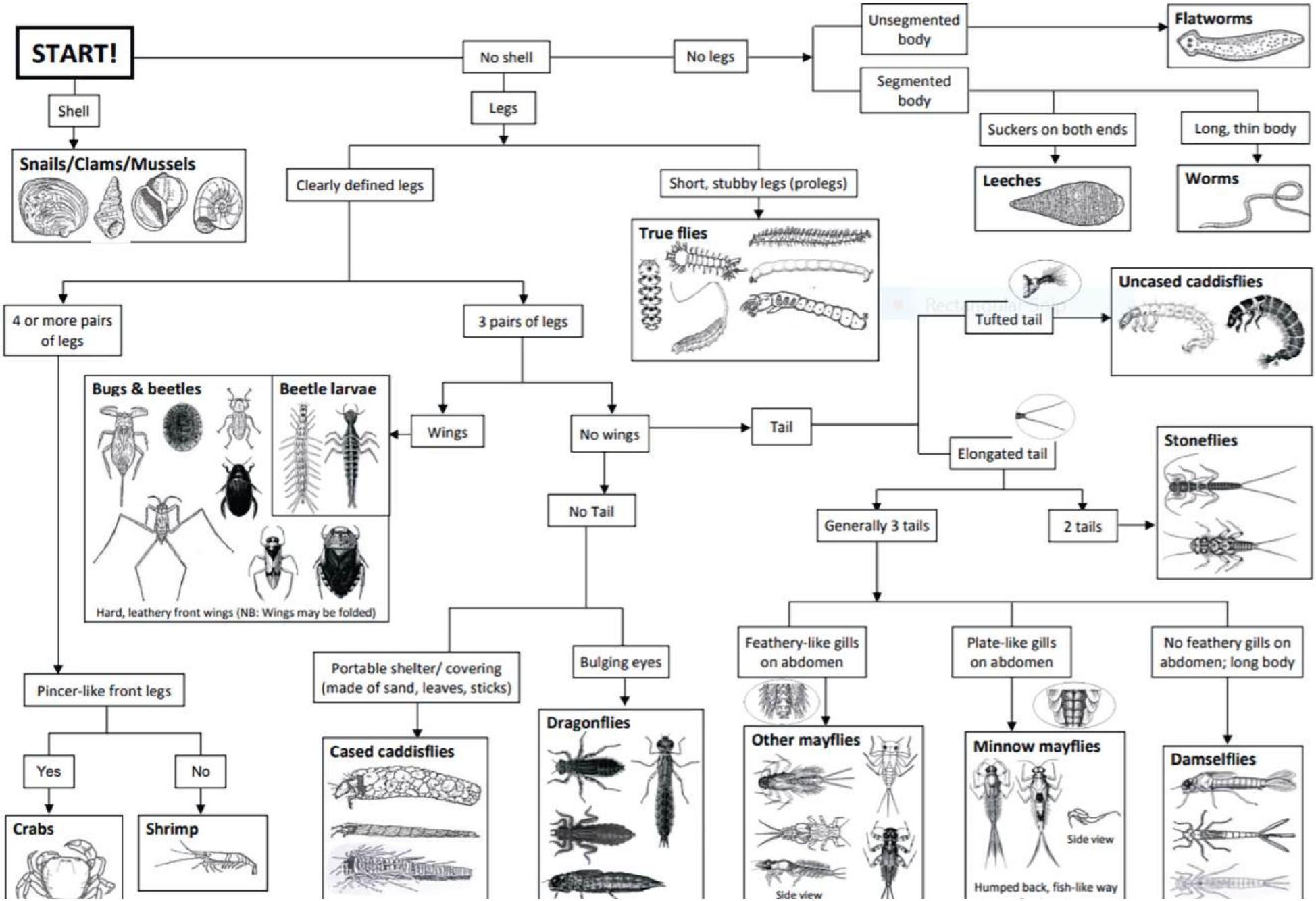
Find an area where there is natural flowing water or a dam, to do the test. Explain to the group that water quality affects the type of animals and plants that can live in it. Some insects can tolerate water that is in a bad condition, while others cannot. Explain that the Mini-SASS test, checks the quality of water by looking at what type of insects can be found. The learners should scoop up a sample of water into the flat, broad tub. They should then use the magnifying glass to identify the organisms they see. The Mini-SASS chart has a grid that assists with identification using the lack or presence of certain body parts etc. Learners must tick off the organisms they find. Each organism has a certain number of points, depending on how sensitive they are to water. Once the points are added up on the sheet, the group can assess in what condition the water is. Visit ***https://minisass.org***

See Mini-SASS "Method" for detailed information. Once the group has completed the Mini-SASS, ask them what can be done to try and ensure our water sources are polluted less. Let each learner come up with at least one pollution solution (e.g. litter less, don't throw oil down drains).

AGE ADAPTATIONS

Ask younger children to do the fun things such as disturb the water and look for insects. Older children or adults can check the insect is identified correctly, help filling the container with water and complete the calculations.

DICHOTOMOUS KEY



SITE INFORMATION TABLE		
River name:		Date (dd/mm/yr):
Site name:		Collector's name:
GPS co-ord Lat(S):	Long(E):	School/organisation:
Site description:		Notes:

pH:	Water temp:	°C:	Dissolved oxygen:	mg/l:	Water clarity:

GPS co-ordinates as degrees, minutes, seconds (e.g. 29"30'25* S / 30°45'10* E) OR as decimal degrees (eg. 29.50694° / 30.75277°E) If you don't have a GPS, upload your results at **www.minisass.org**, find your site on the map, click to upload your result and the co-ordinates are saved for you!

Scoring

1. On the table, circle the sensitivity scores of the identified organisms.
2. Add up all of the sensitivity scores.
3. Divide the total of the sensitivity scores by the number of groups identified.
4. The result is the average score, which can be interpreted into an ecological category given below.

Interpret the miniSASS score:

Although an ideal sample site has rocky, sandy, and vegetation habitats, not all habitats are always present at a site. If your river had no rocky habitats that were sampled, use the sandy type category to interpret your scores.

Ecological category (Condition)	River Category	
	Sandy Type	Rocky Type
NATURAL CONDITION *(Unchanged/untouched - Blue)*		
GOOD CONDITION *(Few modifications - Green)*		
FAIR CONDITION *(Some modifications - Orange)*		
POOR CONDITION *(Lots of modifications - Red)*		
VERY POOR CONDITION *(Critically modified - Purple)*		

Groups	Sensitivity Score
Flat worms	3
Worms	2
Leeches	2
Crabs or shrimps	6
Stoneflies	17
Minnow mayflies	5
Other mayflies	11
Damselflies	4
Dragonflies	6
Bugs or beetles	5
Caddisflies *(cased & uncased)*	
True flies	2
Snails	4
TOTAL SCORE	
NUMBER OF GROUPS	
AVERAGE SCORE *(miniSASS Score)*	
Average Score = Total Score ÷ Number of groups	

Now, upload your results at
www.miniSASS.org

www.minisass.org

Mini-SASS is used to monitor the health of a river and measure the general quality of the water in that river. It uses the make-up of macro-invertebrates (small animals) living in rivers and is based on the sensitivity of the various animals to water quality.

NOTE: *miniSASS does NOT measure the contamination of the water by bacteria and viruses and thus does not tell us if the river water is fit to drink.*

Net (see ***www.minisass.org***)
White container / tray / ice-cream box
Magnifying glass
Pencil
Shoes / gumboots
Hand wash / soap

DON'T HAVE A NET? MAKE YOUR OWN - IT IS EASY!

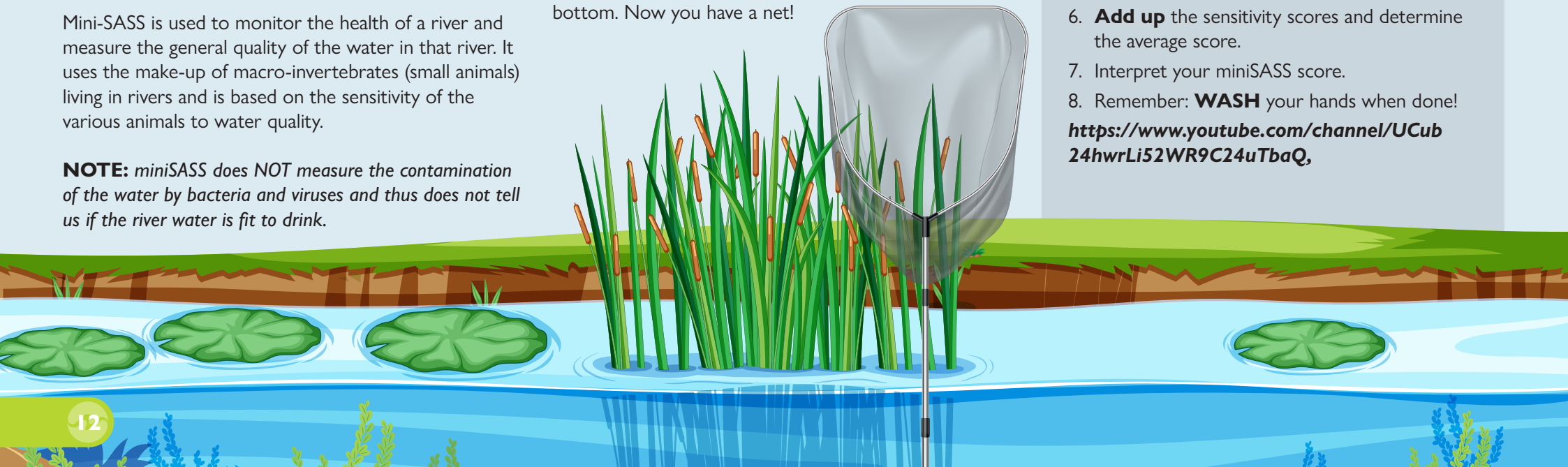
Take any piece of wire, for example an old clothes hanger, and bend it into the shape of a net. Then tie the netting (which can be any porous material) to the wire with a piece of string. Alternatively cut the bottom out of an ice cream container and staple netting to the bottom. Now you have a net!

Method

The best sites have rocks in moving water (**rocky type** rivers). Not all sites have rocks, but may be largely sandy (sandy type rivers).

1. Whilst holding a small net in the current, **disturb** the stones, vegetation, sand etc. with your feet or hands.
2. You can also lift stones out of the current and gently **pick** organisms off with your fingers or forceps.
3. Do this for about **5 minutes** whilst **ranging across the river to different habitats** (biotopes).
4. Rinse the net and turn the contents into a plastic tray. **Identify** each group of organisms using the identification guide (see insert: start with the dichotomous key, then use the identification guide for more information).
5. Fill in the site information and **mark** the identified organisms off on the scoring sheet (back page).
6. **Add up** the sensitivity scores and determine the average score.
7. Interpret your miniSASS score.
8. Remember: **WASH** your hands when done!

https://www.youtube.com/channel/UCub24hwrLi52WR9C24uTbaQ,



ACTIVITY

ACTION PROJECT OPTION 2
PLANT A WATERWISE GARDEN OR MAKE AN EXISTING GARDEN MORE WATERWISE

DURATION

1 to 4 hours (prep and planting - depending on complexity of project selected and number of plants planted) / 30 minutes additional for curriculum aligned activity

RESOURCES

You will need equipment to plant such as spades, and forks, depending on the soil. Additional soil may be needed, a well as your seeds or seedlings that you will be planting.

POINTS

Your group will earn 200 points for making a new waterwise garden from scratch and 100 points for making an existing garden more waterwise.

EVIDENCE

Submit a before and after pic of your garden.

CIRRICULUM LINK

Subject: Natural Sciences and Technology Grade 4, Strand Life and Living Structures, Topic: What plants need to grow. An optional link Subject: Natural Sciences and Technology Grade 4, Strand: Life and Living Structures, Topic: Structure of Plants.

Plants that are not indigenous to an area, may require large amounts of water. It is therefore best to substitute water guzzlers with indigenous (plants from the Western Cape) plants that do not need lots of water. You will need to consult a nursery about waterwise plant species, but some examples may include the spekboom and many other succulents, certain daisy species and pincushions. The best, however, is to get advice from a suitable nursery with experience in indigenous and waterwise plants. They should also advise you on how to maintain these plants and if any special growing preparation, such as a specific soil type, is required. After planting, ask the learners what they think plants need to grow? Ask them if you have provided all of the items needed and link it to any after care that the plant may need. Plants need light, water, air, safety, minerals from the soil, and a place to live. New plants from seed, need water and warmth to germinate.

Once the learners have planted the garden, if you want to link the activity to the curriculum, have them choose one plant to draw and then interview the plant. Once drawn, let them label the following parts of the plant – stem, leaves, roots, flowers (if any). Young children can give you verbal answers if unable to write. They should then ask the plant the following questions and write the answers next to the plant part.

How old are you? Are you a seedling, a small plant or an adult plant with flowers or seeds?

- What does your stem look and feel like ?Green or brown , bendable or stiff, fleshy, hard, soft, thorny etc.
- What do your flowers look and feel like? Pink, green, hard, soft, small, large, bunched together, single
- What do your leaves look and feel like? Green, brown, long, short, lots of leaves on each stem, just one leaf on each stem, flat, round, fleshy, dry
- What do you need to survive? Sun, water, nutrients

Once the learners have completed their interviews, check to see that the answers are correct and assist if not. You can also have the entire group draw and interview the same plant, then work through the answers as a group afterwards and learners can "self-mark".

ACTIVITY

ACTION PROJECT OPTION 3
COMPLETE A GROUP WATER SAVING PROJECT

DURATION

30 minutes – 1 hour to implement the project / 30 minutes (to complete optional water audit sheet)

RESOURCES

Resources may be required, depending on the project selected.

POINTS

Your group will earn 100 points for completing a simple water saving project and 200 points for a complex water saving project.

EVIDENCE

Submit a picture of the water saving project and a calculation estimated on the amount of water saved since implementation.

CIRRICULUM LINK

Subject: Natural Science and Technology Grade 4, Strand: Matter and Materials, Materials around us – the water cycle.

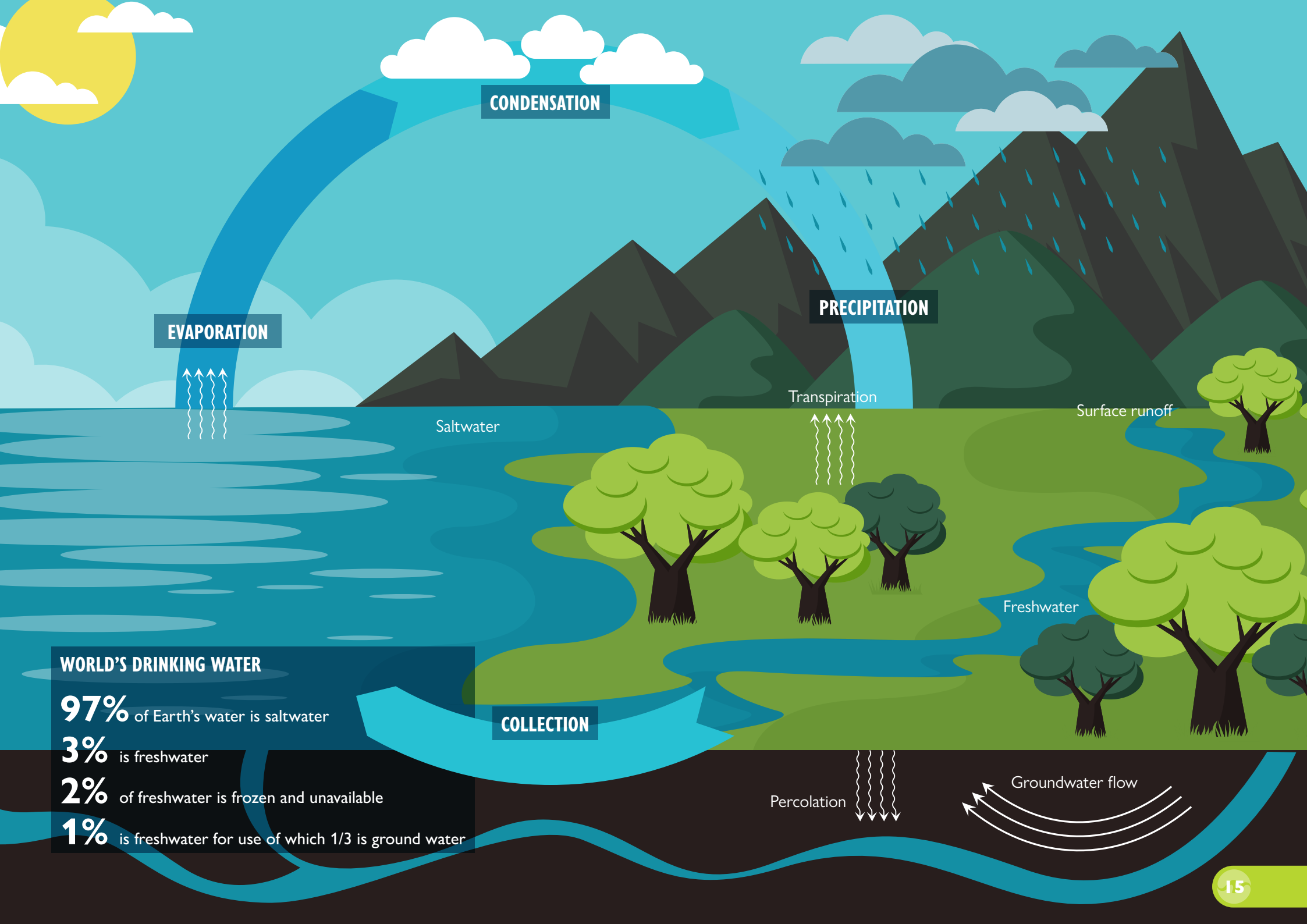
Explain the water cycle to the learners. Explain that there is only so much water on Earth and that it is recycled all the time. Most of the water is not drinkable because it is in the oceans or frozen. As the human population grows and our water needs become more, there is fear that there will not be enough freshwater for us. On top of this, South Africa is actually a water scare country and if we pollute our water sources, water is even more under threat. So, for all of these reasons, it is extremely important to save water.

Explain that today's project is all about saving water. Select a project where the group can be responsible for saving water collectively and implement. Some examples may include:

- Hippo bags are added to everyone's home toilets or toilets at school so that each flush uses less water (note that a 2-litre bottle can also be used to displace water in a toilet cistern). As an additional option, let the learners calculate the amount of water that is saved each day (number of litres saved per flush x average number of flushes per day x number of participants)
- Fundraising for and adding a jo jo tank to a community building or school
- Having children take up shifts at the end of the school day to check that there are no dripping taps at the end of the school day
- Every child starts using a cup of water to brush teeth
- Ask younger children to do the fun things such as disturb the water and look for insects. Older children or adults can check the insect is identified correctly, help filling the container with water and complete the calculations.

AGE ADAPTATIONS

For older children use the terms that they need to know for the water cycle such as precipitation and evaporation. For younger children simply explain the action e.g. water gets hot and becomes water vapor in the air, then forms a cloud, which then falls to earth as rain. Explain the percentages and ratios of different sources of water, for younger children simply state that we only have a very small amount of water that we can use or visually show the proportions using a circle or item.



WORLD'S DRINKING WATER

97% of Earth's water is saltwater

3% is freshwater

2% of freshwater is frozen and unavailable

1% is freshwater for use of which 1/3 is ground water

ACTIVITY

ACTION PROJECT OPTION 4
ADD WATER SAVING LABELS TO A COMMUNUAL BATHROOM OR KITCHEN OR OTHER AREA

DURATION

10 to 30 minutes

RESOURCES

You will need sticker paper, koki pens or a computer to design and a printer. Scissors to cut out the labels.

POINTS

You will earn 25 points per label that is placed in relevant areas

EVIDENCE

Submit a picture of the labels and placements

CIRRICULUM LINK

Subject: Natural Science and Technology Grade 4, Strand: Matter and Materials, Materials around us – the water cycle.

Using the water cycle information given in OPTION 3, explain to learners why saving water is important and that we need to remind ourselves and others to save water.

Decide on where you would want your water saving labels to go and what you want to say on them. Gather the right materials and let learners make and place the labels. Involve the learners in the planning of where and why. Always obtain permission for where your labels will be put up. Some examples include:

- Above select basins at a school or community building – "Please close the tap – save water"
- Above the tap for the hosepipe at a school – "Remember to water early mornings or late afternoon to save water"
- On the outside of hostel or communal shower – "Keep your showers short – save water"



3. Consolidation

Wrap up after your action project by reminding learners why the project they have completed is important to ensure all our rivers and oceans stay healthy. Ask each participant to name one way that they will make sure that they stay water warriors at home. They must each say or write down one thing they will do differently at home after the day, to save water. Ask some of the learners to share their water warrior plans. Younger children do not need to write down the promise.

ACTIVITY

WATER WATCHERS CONSOLIDATION

DURATION

15 minutes

RESOURCES

Pen and paper (older children) / crayons & coloring pencils (younger children)

AGE ADAPTATIONS

Younger children can drawn how they would like to save water





Notes





CapeNature

www.capenature.co.za

email: learning@capenature.co.za

CapeNature Cubs Club
Kids Conserving Nature

GROUPS

Cubs Club lesson plan for
catchment to coast - Save our Seabirds

Use this lesson plan to support your action projects for this term.



Date

August 2025 to October 2025

Duration

Between 1 hour and 1 day (depending on projects selected)

Support material from toolbox



Mini SASS tub and magnifying glasses



Garbage bags and pickers



Whistle/ binoculars for outings



Kai & Friends Book & Activity Book



Save Our Seabirds

Catchment to Coast - Seabirds

We need our marine environments to thrive so that the marine birds will thrive too. Our marine bird species are important and we need to protect them.

Topics covered

Marine birds general (optional on programme)

- How animals adapt to their environment
- What a food chain is
- An example of a marine food chain

Marine birds under threat

- Concept of extinction
- Threats to our marine birds
- Ways in which we can protect our marine bird species

Curriculum links

Natural Science and Technology Grade 7
Strand: Life & Living
Topic: Interdependence – adaptations

Natural Science and Technology Grade 6
Strand: Life & Living & Structures
Topic: Ecosystems and food webs

Natural Science and Technology Grade 5
Strand: Life & Living & Structures
Topic: Food Chains

Natural Science and Technology Grade 4
Strand: Life & Living & Structures
Topic: Structures of animals

Natural Science and Technology Grade 5
Strand: Life & Living & Structures
Topic: Life cycles or skeletons and structures

Social Science Grade 7
Topic: Natural Resources and Conservation in South Africa

Social Science Grade 9
Topic: Resource use and sustainability

Life Skills Grade 4
Personal well being
Topic: Health and environmental responsibility (healthy environment, home and community)

Life Skills Grade 5
Personal well being
Topic: Health and environmental responsibility (local environmental health problems)

Life Skills Grade 6
Social Responsibility
Topic: Taking care of and protecting animals and places of safety for animals

Life Orientation Grade 9
Volunteerism concept

Outcomes

Know

- That our oceans and marine birds are under threat
- What the threats are to our marine birds and environment
- At least one thing that can be done to protect our marine birds
- That if our marine environments are harmed, it has an effect on humans as well as birds

Do

- Actively do something to protects our marine birds
- Skills obtained from the programme for example listening, reading, writing, analysing

Value

- Believe that it is our responsibility to protect our marine environments
- Believe that our marine environment is irreplaceable and that without it, humans will be unable to survive

LESSON PLAN

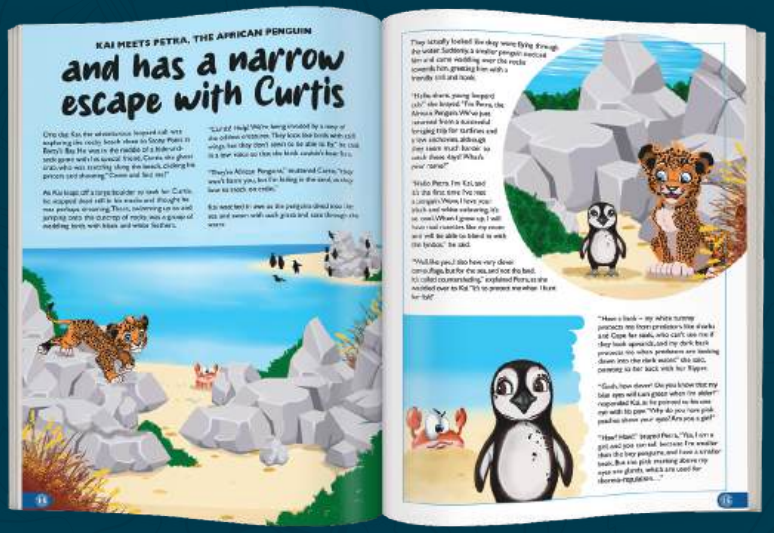
1. Introduction

THINGS TO REMEMBER BEFORE STARTING YOUR LESSON

- Introduce staff
- Outline of the day/what to expect
- Rules of engagement
- Safety brief
- Divide into groups if applicable

SETTING THE SCENE/TUNING-IN

You want to teach the group a little bit about the catchment to coast concept as well as seabirds, before completing your action project. The story about Kai meeting and African penguin can be used to introduce the topic.



CONCEPT (ADAPTATIONS & ECOSYSTEMS)

ACTIVITY

OPTION 1 STORYTELLING
KAI MEETS AN AFRICAN PENGUIN 1

DURATION

15 minutes

RESOURCES

Kai & Friends Book – Kai Meets an African Penguin

CIRRICULUM LINK

Natural Science and Technology Grade 7 / Strand: Life & Living / Topic: Interdependence - adaptations

Read the Kai Meets an African penguin story.

1. **Paragraph 2** end – ask learners to waddle like a penguin – arms stiff next to body and sway side to side
2. **Paragraph 5** – ask kids to pretend to be swimming in the water
3. **Paragraph 6** ("trill and honk") – ask the kids to make the sound a penguin makes and help the penguin greet Kai – like a donkey while waddling at the same time.
4. **Paragraph 7** – ask the kids, who do you think Petra is struggling to catch fish? Get a few answers
5. **Paragraph 13** (…a large butterfly fluttered down from the treetops…) – tell the kids you don't think Kai heard that word, can they help the penguin out? Let kids say the word THER – MO -RE – GU – LA- TION out slowly a few times
6. **Paragraph 17** (He dashed from rock to rock) – ask the children to help Kai find Petra. Let them hold their hands up above their eyes and search the horizon calling "Petra! Petra!)
7. **Paragraph 18** – ask children to run away quickly like Curtis (side stepping to the left, then side stepping to the right). Tell them to help Curtis the crab get away from Petra and yell "Run Curtis"
8. **Paragraph 22** – ask children what it means that Petra is Critically Endangered.
9. **Last paragraph** – ("The penguins were breying and honking for Petra to join them") ask the children to help the other penguins call Petra back by honking.
10. **Once the story** is finished explain some things to the children and ask some questions:
    - **Explain** to learners that animals are all different and that often they need to adapt to their environment. Ask in what ways has Petra the Penguin adapted to her environment?
    - **Answer:** Pink eyes for thermoregulation and adapting to hotter environments, black back so that predators cannot see her from above when swimming in the water and white belly so that sharks and seals cannot see her from below.
    - **Explain.** Kai and Petra live in different environments? so they would each have adapted to these. Can they think of any ways in which the ghost crab or Kai have also adapted to their environments.
    - **Answer** may vary from leopard spots for camouflage to pincers for finding food or protection.

KAI MEETS PETRA, THE AFRICAN PENGUIN

and has a narrow escape with Curtis

P1 One day, Kai, the adventurous leopard cub was exploring the rocky beach close to Stony Point in Betty's Bay. He was in the middle of a hide-and-seek game with his special friend, Curtis, the ghost crab, who was scuttling along the beach, clicking his pincers and shouting "Come and find me!"

P2 As Kai leapt off a large boulder to look for Curtis, he stopped dead still in his tracks and thought he was perhaps dreaming. There, swimming up to and jumping onto the outcrop of rocks, was a group of waddling birds with black and white feathers.

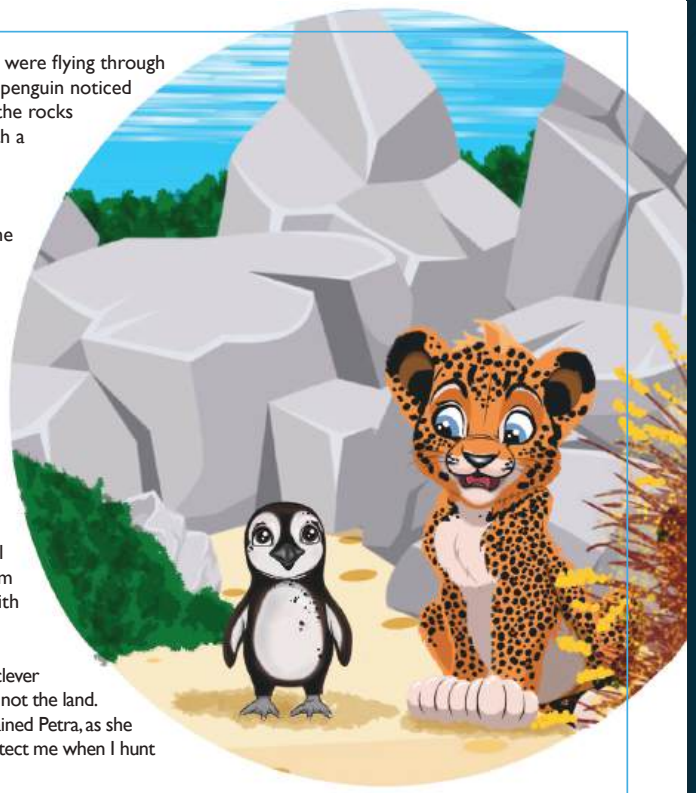
"Curtis! Help! We're being invaded by a navy of the oddest creatures. They look like birds with stiff wings, but they don't seem to be able to fly," he said, in a low voice so that the birds couldn't hear him. P3

"They're African Penguins," muttered Curtis, "they won't harm you, but I'm hiding in the sand, as they love to snack on crabs." P4

Kai watched in awe as the penguins dived into the sea and swam with such grace and ease through the water. P5



Note that all stop points in the story are marked as follows e.g. Paragraph 5 = P5



P6 They actually looked like they were flying through the water. Suddenly, a smaller penguin noticed him and came waddling over the rocks towards him, greeting him with a friendly trill and honk.

P7 "Hello, there, young leopard cub," she brayed. "I'm Petra, the African Penguin. We've just returned from a successful foraging trip for sardines and a few anchovies, although they seem much harder to catch these days! What's your name?"

P8 "Hello Petra. I'm Kai, and it's the first time I've met a penguin. Wow, I love your black and white colouring, it's so cool. When I grow up, I will have real rosettes like my mom and will be able to blend in with the fynbos," he said.

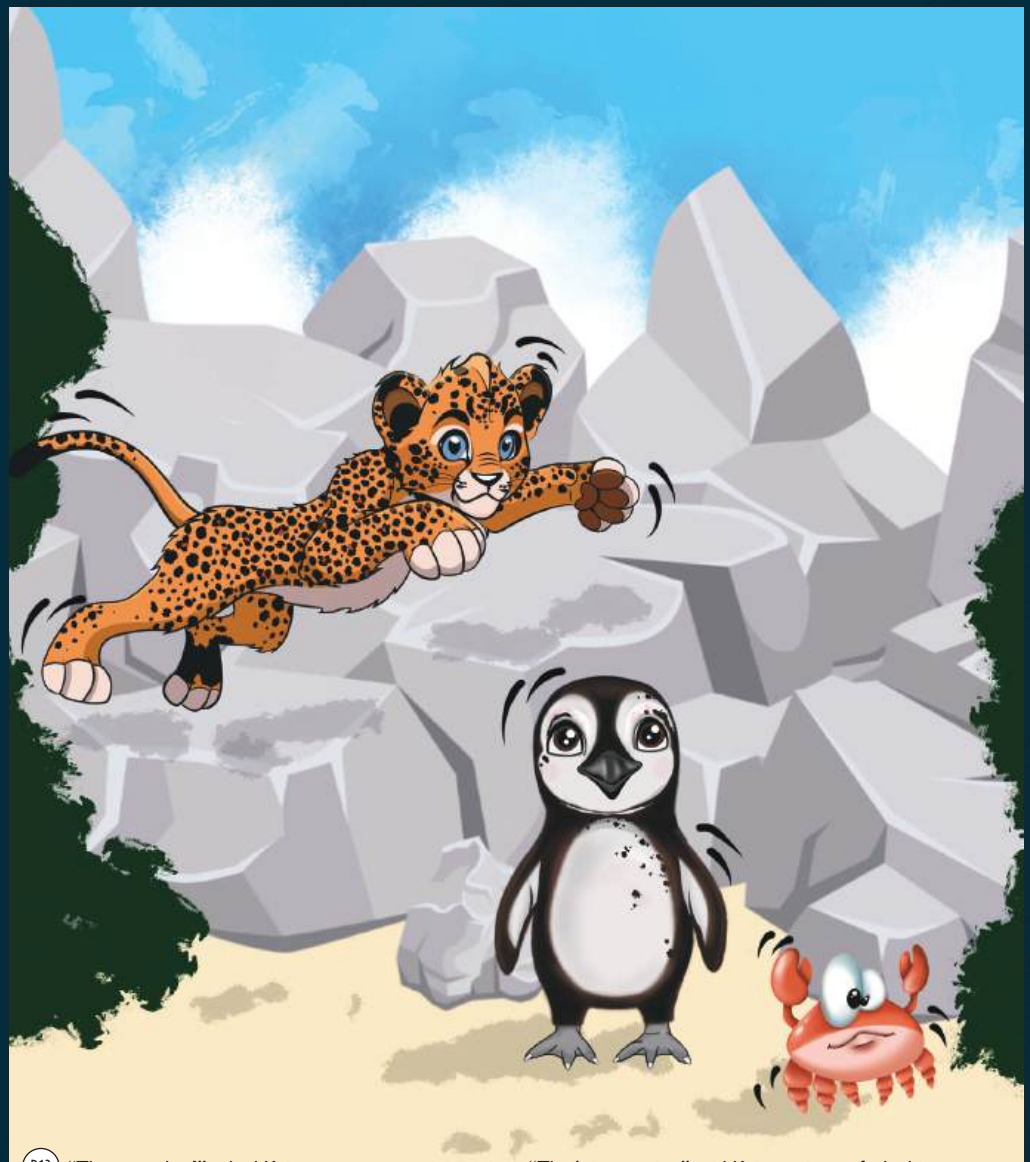
P9 "Well, like you, I also have very clever camouflage, but for the sea, and not the land. It's called countershading," explained Petra, as she waddled over to Kai. "It's to protect me when I hunt for fish!'



P10 "Have a look – my white tummy protects me from predators like sharks and Cape fur seals, who can't see me if they look upwards, and my dark back protects me when predators are looking down into the dark water," she said, pointing to her back with her flipper.

P11 "Gosh, how clever! Do you know that my blue eyes will turn green when I'm older?" responded Kai, as he pointed to his one eye with his paw. "Why do you have pink patches above your eyes? Are you a girl?"

P12 "Haw! Haw!" brayed Petra, "Yes, I am a girl, and you can tell because I'm smaller than the boy penguins, and have a smaller beak. But the pink marking above my eyes are glands, which are used for thermo-regulation…"



P13 "Thermo-what?" asked Kai.

P14 "Regulation," she replied. "The hotter we get, the more blood is sent to these glands so that it can be cooled by the air, which makes them pinker. It helps cool us on very hot days. But I must admit, I think they're very pretty!"

P15 "That's interesting," said Kai, starting to feel a bit bored with the overload of information. He was ready for some action.

P16 "Want to play catches-on-the rocks?" shouted Kai, above the sound of the waves. The next thing, Petra was gone. Kai looked around but couldn't find her.

P17 He dashed from rock to rock, looking around for his new friend.

P18 All of a sudden, he saw Petra emerging from the sea and chasing something on the beach with a fast rolling waddle. Kai bounded after Petra, realising that she was after his friend Curtis, who was side-sprinting for his life to escape.

P19 Kai pounced on Petra, pinning her to the sand, while he growled, "Petra, Curtis the ghost crab is one of my best friends, so you can't eat him."

P20 Curtis meanwhile burrowed into the sand, muttering, "I wish these silly birds would pick on someone their own size and not be such bullies. I'm hardly a snack!".

P21 Kai let Petra go, while she dusted off her feathers and stamped her webbed black and grey feet in the sand.

P22 "Kai, I apologise but do be careful! I have just finished moulting and have all these lovely new feathers, which I don't want to ruffle too much! And don't pounce on me again, after all, I am critically endangered, so do take more care! That's why we live at the Betty's Bay colony, so we are protected."

P23 Curtis slowly protruded his two eyes from the sand, grumbling, "Well, promise both Kai and I that you won't attack me ever again and then we can all be friends.





P24 You can even help us clean the beach and protect our habitat, so that there is plenty of food for all of us!"

P25 The penguins on the rocks were braying and honking for Petra to join them, because they were returning to the sea. She waved goodbye with her flipper to her new friends, Kai and Curtis, who were tearing down the beach, continuing their game of hide-and-seek.

AGE ADAPTATIONS

AGES 4 – 8
Add additional actions into the story with repetition

AGES 9 – 13
Tone down the actions if needed and add on deeper questions such as asking the children why they think Petra's eye are pink, before the story answers it.

ACTIVITY

OPTION 2 STORYTELLING
KAI MEETS AN AFRICAN PENGUIN 2

DURATION

20 minutes

RESOURCES

Kai & Friends Book, pen and paper per child or group of children

CURRICULUM LINK

Subject - Natural Science and Technology Grade 6/'Strand: Life & Living & Structures/Topic: Ecosystems and food webs AND Subject - Natural Science and Technology Grade 5/'Strand: Life & Living & Structures/Topic: Food Chains

Read the story in the same manner as with STORYTELLING 1

- **Explain.** In an ecosystem, there are living and non-living things. Ask the children to name some of the living and non living things in the story (living e.g. crab, leopard, penguins/ non living sand/ shells/ rocks)
- **Explain.** In an ecosystem, plants and animals are connected to each other by their feeding relationships. This always starts with a plant because plants use the sun to make food. Reminding them that in the story, the penguin tried to eat the crab, ask them what they think the crab would eat and what would eat the penguin. Ghost crabs eat insects or the eggs of turtles. Penguins may be eaten by sharks or seals. Using these animals, ask them to draw a food chain. SUN – SEAPLANT – TURTLE – GHOST CRAB – PENGUIN – SHARK.
- **Tip.** You can have ready prepared pictures or words for the learners to use, especially for younger children.
- **Explain** that penguins mostly eat fish like sardines. Ask the learners to replace the CRABS with FISH

1. **Ask** what they think would happen to the penguins if all the fish and crabs disappeared? They will answer that the penguins will all die.
2. **Explain** to them that this is one of the reasons Petra and her kind are endangered.

AGES 4 – 8
Have a visual example of the food chain ready and possibly preset name tags or pictures.

AGES 9 – 13
To make the lesson a little harder, explain the different levels of the food chain. Primary producers, Primary consumers, Secondary consumers, Tertiary consumers and decomposers.

PART 2 TUNING IN TO OUR SEABIRDS UNDER THREAT

ACTIVITY

INTRODUCING THE PLIGHT OF OUR MARINE SEABIRDS

DURATION

15 minutes

RESOURCES

None

CURRICULUM LINK

Links to curriculum in action projects below.

- **Explain** to learners that many seabird species, such as the African Penguin, are in danger of becoming extinct. This is due to a variety of reasons, one of them being declining fish stocks. Explain that endangered means that a species has become very few that it runs the risk of becoming endangered in future.
- **Ask** the learners how they think we can protect our seabirds and then lead into the activity that you have selected as one of those actions that we can do.

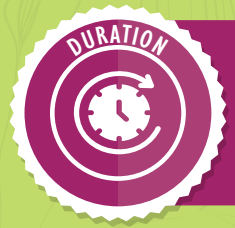
AGES 4 – 8
Explain concepts like declining fish stocks in simple, plain language.

2. Action Projects

Ensure to consult your newsletter for point allocations for each activity. Any number of activities below may be completed and is entirely optional. The more projects that are completed, the more points your group will earn.



ACTION PROJECT OPTION 1
VISIT A RESERVE KNOWN FOR IT'S BIRDS OR A COASTAL AREA AND SPOT SOME BIRDS



1 to 8 hours (depending on length of stay)



You will need to pay entrance fees for some reserves like Stony Point and Bird Island. For long stays, you may want to pack in refreshments. Your binoculars and whistle from your support box should be taken with. Bird identification book (optional).



Your group will earn 150 points for a visit to a nature area and an additional 25 points for each bird they have identified.



Submit a group picture on the reserve and a picture taken of each bird, with their name



Grade Levels:
- Natural Science and Technology – Grade 4
- Life Skills – Grade 6

SUBJECT 1: NATURAL SCIENCE AND TECHNOLOGY – GRADE 4

Strand: Life and Living / Structures
Topic: Structures of Animals
Activity Title: Bird Observation and Interview

Learners should observe a bird in its natural habitat, draw and label its external body parts, and explore how its body structure supports its way of life.

Instructions:

1. In groups, learners will observe one bird they see in the area.
2. Each group will draw and label the bird with the following parts:
   - Eye
   - Beak
   - Wings
   - Feet
   - Neck
   - Head
   - Feathers
   - Legs
3. After completing the drawing, ask learners to pretend they are interviewing the bird. They should write down the bird's answers to these questions:
   - How large are you?
   - How are your babies born?
   - Who do you live with?
   - How do you move?
   - What is your body covered in?

SUBJECT 2: LIFE SKILLS – GRADE 6

Topic: Social Responsibility – Taking care of and protecting animals and places of safety for animals

Objective:
Learners will understand the importance of conservation areas and the role they play in protecting animals and preserving biodiversity.

Extension Activity:
- Discuss the need for conservation areas (such as the one being visited).
- Explain how these areas help:
  - Protect species from extinction
  - Provide safe habitats for animals
  - Educate people about nature and biodiversity
- Connect this discussion to the birds they observed by highlighting how protected environments help ensure their survival.

By visiting a coastal nature reserve, you support their conservation efforts which includes the protection of marine birds. The best way to learn is by experience and seeing these birds in their natural habitat is a great idea. Once at the ocean, see how many coastal bird species you can spot (use your binoculars if necessary). Ask learners to try and identify some bird species. Use the information signboards at the relevant reserve to formulate some questions for the learners about the different coastal bird species.



ACTIVITY

ACTION PROJECT OPTION 2
ENJOY A SUSTAINABLE FISH BRAAI OR MEAL

DURATION

1 to 2 hours

RESOURCES

Fish will need to be bought, and all items required to cook it, be made available.

POINTS

Your group will earn 50 points for downloading the SASSI APP and 150 points for hosting a sustainable fish braai and eating a SASSI green listed fish

EVIDENCE

Submit a screenshot of the SASSI APP on the group leaders' phone and a group picture at the gathering with the name of the fish eaten.

Grade Levels:
- Natural Science and Technology – Grade 4
- Social Sciences – Grade 7 or Grade 9

SUBJECT 1: NATURAL SCIENCE AND TECHNOLOGY – GRADE 4

Strand: Life and Living / Structures
Topic: Structures of Animals
Activity Title: Fish Observation and Interview

Objective:
Learners will examine the structure of a fish and understand how its body parts are suited for living in water.

Instructions:
1. In groups, learners will draw a "fish" and "label" the following external body parts:
   - Eye
   - Body
   - Tail
   - Fins
2. After labeling the drawing, learners will "pretend to interview the fish" and write down its responses to the following questions:
   - How large are you?
   - How are your babies born?
   - Who do you live with?
   - How do you move?
   - What is your body covered with?
   - What is the texture of your skin?
   - Where do you live?

SUBJECT 2: SOCIAL SCIENCES

Grade 7 Topic: Natural Resources and Conservation in South Africa
Grade 9 Topic: Resource Use and Sustainability
Activity Title: Fish as a Natural Resource

Objective:
Learners will explore the concept of fish as a valuable but diminishing resource, and its broader impact on ecosystems and human livelihoods.

Instructions:
1. Learners will write a "short paragraph or essay" on the following topic:
   - "Fish as a resource is becoming scarce – what are the effects on humans, seabirds, and other animals?"

Key Points to Consider:
- Overfishing and its impact on fish populations
- Effects on food security and coastal communities
- How declining fish numbers affect predators like seabirds and marine mammals
- The importance of sustainable fishing practices and marine conservation

Explain. Many coastal birds, such as penguins, rely on fish as their primary source of food. If the fish stocks in the ocean become low, penguins may struggle to find food and a lack of food is one of the reasons that these birds are declining rapidly.

Because there is a realisation that marine resources are being overexploited, sustainable seafood initiatives such as SASSI have been put in place to protect vulnerable fish stocks, which in turn affect our seabirds and other marine life. SASSI, an initiative of WWF, affords consumers the opportunity to make better seafood choices by selecting fish that are in abundance instead of species that are under threat.

SASSI classifies food under three colours, GREEN – fish species that are abundant and which we should eat freely / ORANGE – fish species that are not in abundance, but that have not been flagged as under threat yet and from which we should eat with caution/ and RED - fish species that are under threat and from which we should not eat. It is important that we therefore make sustainable fish choices when we eat this food type and that we eat fish from the green list. Your choices can help reduce



overfishing, protect marine habitats, support sustainable fishing practices and transform supply chains! All of these in turn help our marine bird species in one way or another.

By choosing green they will:

- Choose seafood from healthy populations
- Reduce demand for vulnerable species
- Protect ecosystems by allowing over-exploited species to recover
- Support fisheries with responsible and sustainable practices
- Choose seafood caught or farmed with minimal environmental damage
- Avoid supporting irresponsible or harmful fishing or farming practices
- Avoid supporting bycatch – unwanted catch of other marine species/animals

For this project, ask your group to download the SASSI App onto their phones. As a group, select a GREEN categorised fish and prepare and eat a yummy fish meal together. Make the lesson fund by asking different members of the group to be responsible for different things (preparing fish, cooking fish, checking the fish status on SASSI, preparing salads, setting the table etc.). During the meal, to give it more context, pose some questions to the group relating to the topic. Two examples:

- What is SASSI and what color fish should we always eat from?
- How does eating a green fish benefit the ocean and marine species?

**Reference: SASSI*

LIST (EXAMPLE)

GREEN | ORANGE | RED



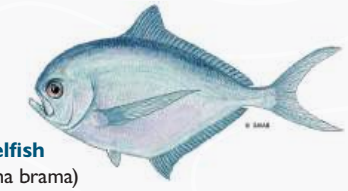
Abalone
(Haliotis midae)
Abelone, Perlemoen, Klipkous



Albacora tuna
(Thunnus alalunga)
Albakoor, Albacore, Longfin tunny, Longfin tuna, Langvin tuna



Anchovy
(Engraulis encrasicolus)
Anchovies, Ansjovis, Ancovetta



Angelfish
(Brama brama)
Atlantic pomfret, Angel, Engelvis, Brama brama



Argentine Shortfin Squid
(Illex argentinus)
Argentine Shortfin Squid



Argentine hake
(Merluccius hubbsi)
Stockfish, Stockvis, Merlu, Fishfingers



Atlantic mackerel
(Scomber scombrus)
Mackerel



Atlantic salmon
(Salmo salar)
Norwegian salmon, Scottish salmon, Atlantiese salm



Baardman
(Umbrina spp.)
Umbrina, Belman, Belman kabeljou, Belmont



Baby clam
(Paphia undulata)
Baby clam, Undulate venus, Short-necked clam, Surf clam, Nylon clam



Banded galjoen
(Dichistius multifasciatus)
Striped galjoen, Gestreepte galjoen, Streep Galjoen, Striped galjoen, Damba, Sandvis



Bigeye tuna
(Thunnus obesus)
Albakoor, Albacore, Lonfin tunny, Longfin tuna, Langvin tuna, bigeyes



Biscuit Skate
(Raja straeleni)
Biscuit, skate



Black Mussel
(Choromytilus meridionalis)
South African mussel, Mussel



Black Musselcracker
(Cymatoceps nasutus)
Poenkop, Black steenbras, Poensie, Swart steenbras, John cracker, black mussel cracker



Blacktail
(Diplodus sargus capensis)
Dassie, Kolstert, Blacktail bream

ACTIVITY

ACTION PROJECT OPTION 3
DO A BEACH OR ENVIRONMENTAL CLEAN UP

DURATION

30 minutes to 1 hour

RESOURCES

Gloves for all children as well as a picker and garbage bags from your support box may be used. In addition to this, learners can use a pen and paper to count the different types of litter collected.

POINTS

Your group will earn 200 points for doing a beach clean up

EVIDENCE

Submit a group picture with the trash collected at the beach clean up

CURRICULUM LINK

Life Skills Grade 4, Personal well being, Topic: Health and environmental responsibility (healthy environment, home and community) and Subject: Life Skills Grade 5, Personal well being, Topic: Health and environmental responsibility (local environmental health problems) link directly to a clean up. Life Orientation Grade 9, Volunteerism concept can be explained and use the action project as an example of the group volunteering their time at no cost by completing the clean up.

Explain the link of trash to seabirds. Seabirds are often curious about garbage and may also confuse it for food. This can cause digestion problem complications, disease and infection, and in some cases, even death. Less litter in the environment equals less sea birds affected in this manner. By cleaning up our environment, we remove potential hazards that may affect birds in future as well as protect the habitats in which they live.

Any trash that is thrown away inland, eventually ends up in the ocean, so cleaning up any inland area or beach will be of help to the environment. Gather the troops, and clean up a beach, or any inland area. As an optional add on, ask them to write down and record the type and number of trash they collect (e.g. 5 cigarette butts, 20 tin cans, 1 takkie). Explain that waste is not only harmful to the birds, but to us as well.

Once the clean-up is completed, ensure that the trash bags are disposed of responsibly.



ACTIVITY

ACTION PROJECT OPTION 4
PLAN AND PERFORM A TRASHY FASHION SHOW

DURATION

2 to 10 hours

RESOURCES

You will need trash that has been cleaned as well as materials such as staplers, glue, string and tape, to keep the trash pieces together. You may require prizes for the winner of your fashion show. Reach out to CapeNature to see how we can help!

POINTS

You will earn 350 points for planning and hosting a trashy fashion show.

EVIDENCE

Submit a group photograph at the fashion show event and at least two pictures of two items made from waste

CURRICULUM LINK

Life Skills Grade 4, Personal well being, Topic: Health and environmental responsibility (healthy environment, home and community) and Subject: Life Skills Grade 5, Personal well being, Topic: Health and environmental responsibility (local environmental health problems) link directly to a removing trash from the environment and re-using it.

Using the background information and trash-seabird links as set out in Option 3, explain the link between trash and seabirds. When trash can be turned into treasure, it not only removes litter from the environment, but also reduces our carbon footprint. By re-using items, rather than buying a new one, we reduce our carbon footprint which in turn helps our seabirds. Global warming affects seabirds in a negative way and therefore reduced items bought = healthier seabird populations.

Use a fashion show as an example of how trash can be turned into treasure and as a symbolic gesture towards minimising waste. You can divide your group into teams or they can each make a fashion item individually. Plan ahead so that learners can collect and clean the trash items that they want to use for the clothing they will be making. Arrange a day or two where they can plan their outfit and start making them, as well as the actual reveal day or fashion show.



ACTIVITY

ACTION PROJECT OPTION 5
SHARE YOUR LOVE OF SEABIRDS

DURATION

30 minutes to 2 hours (preparing information to be shared)/
10 minutes to 1 hour (sharing information)

RESOURCES

You will need to draw up a list of resources once you have decided what platform and means will be used to share the information.

POINTS

Your group will earn 100 points for sharing information about seabirds and an additional 25 points for each platform it is shared on

EVIDENCE

Submit a picture of the information shared and pictures of the information on the different platforms (the platform must be CLEARLY visible)

CURRICULUM LINK

To link to the curriculum, select a topic from the curriculum and have learners research the information to prepare a poster or infographic, depending on age. Some ideas for topics include Subject - Natural Science and Technology Grade 5/ Strand: Life & Living & Structures/Topic: Life cycles or skeletons and structures. For Grade 7, Social Science, Topic: Natural Resources and Conservation in South Africa or Grade 9 Social Science, Topic: Resource use and sustainability can be used to discuss the reduction of natural resources and the effect it has on the sea birds in South Africa. Subject: Life Skills Grade 6, Social Responsibility, Topic Taking care of and protecting animals and places of safety for animals, can also be used.

Explain. By sharing information about seabirds, it increases awareness of their plight. The group should come up with one way in which they can shar information about their favourite seabird/birds. Sharing can be in the form of a presentation, creating an infographic or video for social media or a poster made and put up in the classroom. The group can use any material and means to share information – the sky is the limit.



3. Consolidation

ACTIVITY

PENGUIN PROMISES CONSOLIDATION

DURATION

15 minutes

RESOURCES

Pen and paper (older children)

Wrap up after your action project by reminding learners why the project they have completed is important to the plight of seabirds. Ask each participant to make one penguin promise – write down one action that they will change moving forward that can contribute towards seabird conservation. Some examples may include tell more people about penguins or never use a plastic straw again. Ask some of the learners to share their penguin promises. Younger children do not need to write down the promise and can even draw it instead.





Notes





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