

**Educators' Guide to
Rainforest Wild Adventure (WEST)**

Choose Your Adventure!

**Worksheet for
Primary 5 & 6 students**



**Mandai
Rainforest Wild
Adventure**



What's Inside?

Rainforest Wild Adventure (WEST) features a variety of animals found in diverse habitats.

Use this guide and the accompanying worksheets to help your students explore the habitats in **Rainforest Wild Adventure (WEST)** and learn more about the inhabitants.

The worksheets touch on key topics in the science syllabus, specifically Interactions.



Karst



Forest Floor & Canopy



Stream & Watering Hole



Cavern

About Rainforest Wild Adventure (WEST)

As Asia's first adventure-based zoological park, **Rainforest Wild Adventure (WEST)** features 36 species of animals in habitats that simulate the environment where they are found naturally. Choose your adventure, from canopy to cavern and enjoy chance encounters with the animals.

Explore the 8 thematic zones:

The Karsts



Karsts are unique landscape shaped by the natural erosion of limestone over time. Southeast Asia is home to extensive tower-shaped karsts, which are replicated at **The Karsts** in Rainforest Wild Adventure (WEST).

The Cavern



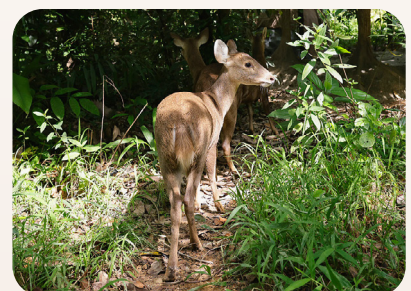
Caverns are caves with underground passages and chambers. **The Cavern** is inspired by Sarawak's Mulu Caves, one of Southeast Asia's largest and most complex cave systems, and a UNESCO World Heritage site.



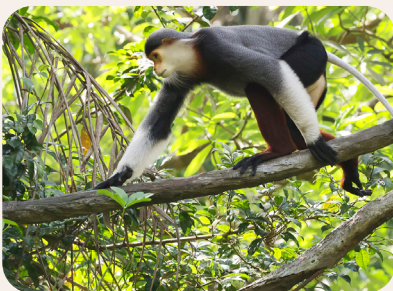
Entrance Gorge



The Outpost



Forest Floor



The Canopy



Dr Lillyn Teh Rock Cascade



Watering Hole

'Choose Your Wild' Experience

There are various paths you can take to explore **Rainforest Wild Adventure (WEST)**. We recommend that you attempt the Elevated Walkway and decide on one of the two routes indicated below, based on the time you have.



Elevated Walkway Shorter Route

Directions:

Keep right at the two intersections
(circled in white)

Estimated duration:

75 mins

Zones covered

(in order of walking sequence):
 Entrance Gorge → The Karsts →
 The Outpost → Forest Floor →
 Watering Hole → The Cavern

Elevated Walkway Longer Route

Directions:

Turn left at the 1st intersection
to continue onto the longer route

Estimated duration:

150 mins

Zones covered

(in order of walking sequence):
 Entrance Gorge → The Karsts → The Outpost
 → Forest Floor → Dr Lillyn Teh Rock Cascade* →
 The Canopy* → Watering Hole → The Cavern

* These zones are not included in the shorter route

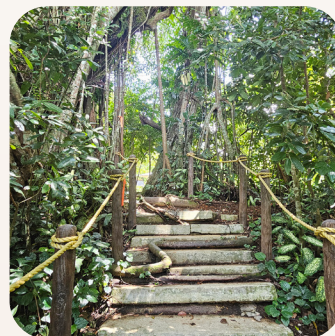
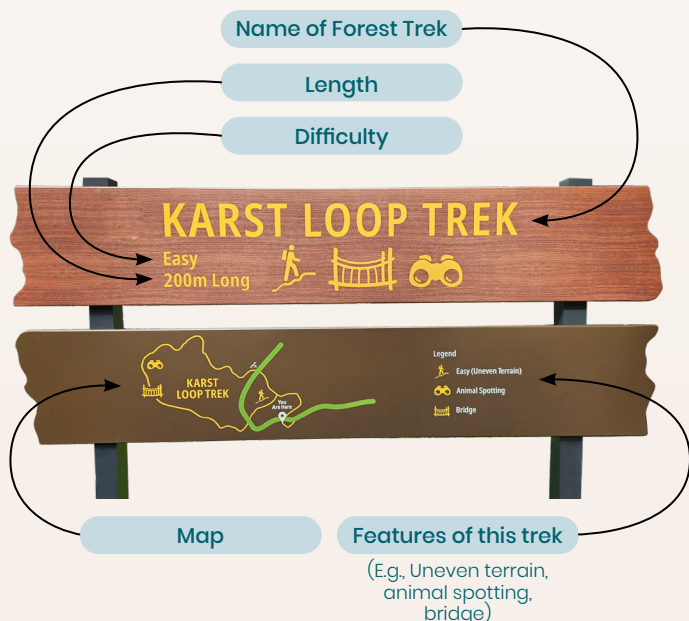
'Choose Your Wild' Adventure

You may choose to explore some or all of the **7 Forest Treks** if your students are game for it. Test their motor skills as they navigate boulder crossings, log bridges, and suspended walkways, while discovering tunnels, bubbling springs, and a langur walkthrough habitat.

Note: All Forest Treks are connected to the Elevated Walkway, allowing for flexible entry and exit at any time. Please refer to the map on page 4 for the locations of each trek.

Name of Trek	Difficulty	Estimate Length	Features
1 Log Crossing Trek	Moderate	100m	Boulder crossing, Log crossing, Stream
2 Karst Loop Trek	Easy	200m	Uneven terrain, Animal spotting, Bridge
3 Forest Floor Trek	Moderate	120m	Boulder crossing, Log crossing, Animal spotting
4 Root Hollow Trek	Easy	160m	Uneven terrain, Log crossing, Animal spotting
5 Predator Trek	Easy	100m	Uneven terrain, Animal spotting, Bridge
6 Upper Stream Trek	Moderate	120m	Boulder crossing, Bridge, Stream, Animal spotting
7 Lower Stream Trek	Moderate	120m	Boulder crossing, Bridge, Stream, Animal spotting, Log crossing

Look out for signages at the start of each Forest Trek.
Here's how to interpret the signages :



Traverse uneven paths beneath strangling figs at **Root Hollow Trek**



Navigate a suspended bridge over water at **Karst Loop Trek**

Worksheet

An Enriching Learning Journey

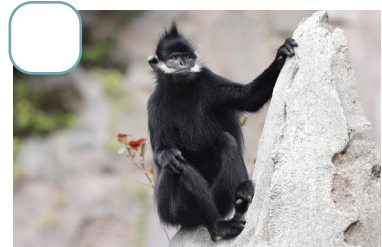
**Recommended For
Primary 5 & 6**



The Karsts

Karsts are unique landscape shaped by the natural erosion of limestone over time. Southeast Asia is home to extensive tower-shaped karsts, which are replicated at **The Karsts** in Rainforest Wild Adventure (WEST).

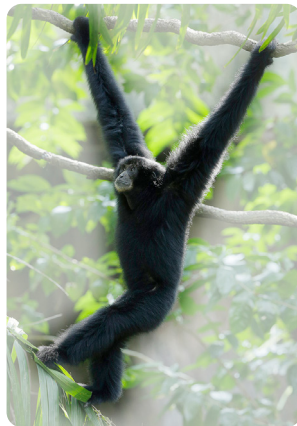
Look out for the Francois langurs at **The Karsts**. They have special hands and feet to climb steep, sharp limestones. You may be lucky enough to catch them leaping across limestones.



Francois Langur

Complete these activities at **B The Karsts**

Primates found in karst hills have special features adapted for moving across steep sharp limestones. Observe the Francois langur closely to answer the following questions.



1

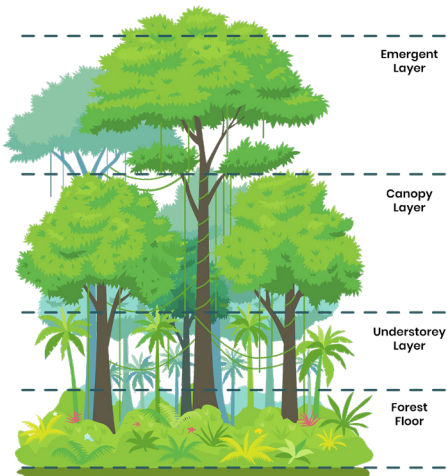
Label one structural adaptation and explain how the adaptation helps the Francois langur survive better in the environment.

2

The Francois langur (left) is a monkey while the siamang (right) is an ape. How do you tell a monkey and ape apart based on their appearance?

Hint: Observe its body parts carefully

Layers of a Rainforest



Tropical rainforests occur in areas of high rainfall and year-round warm climate, typically found in countries near the equator. Despite covering less than 2% of the Earth's surface, tropical rainforests support over half of all terrestrial life forms that can be found here.

In a rainforest, there are **4 different layers**. Different animals live in the different layers to avoid competition. However, they may move from one layer to another at times.

Tick the boxes if you spot the animals below while exploring Rainforest Wild Adventure (WEST).

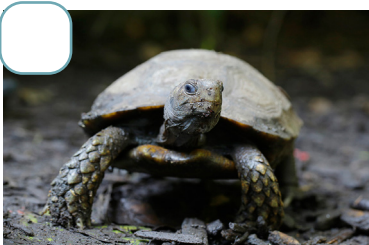
Spot these animals at



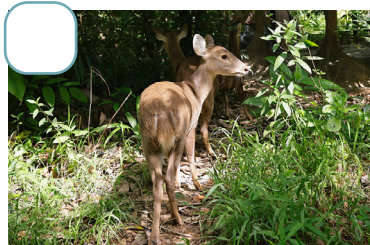
Forest Floor &



Dr Lillyn Teh Rock Cascade



Asian Brown Tortoise



Hog Deer

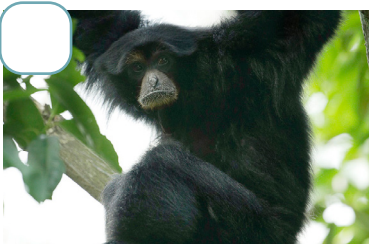


Malayan Tiger

Spot these animals at



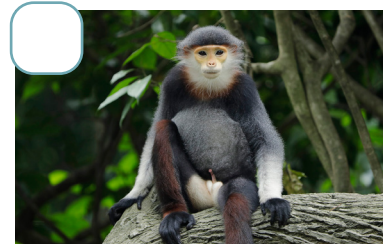
The Canopy



Siamang



Philippine Spotted Deer



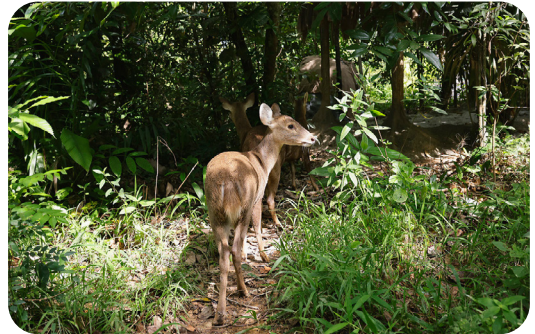
Red-shanked Douc Langur

Forest Floor

The forest floor is dark and humid.

Large animals like tigers, tapirs, elephants and deer roam but smaller life forms dominate – insects, worms and other invertebrates.

Dead plants and animals are broken down by fungi, bacteria, earthworms, termites and other decomposers, releasing nutrients to nourish the forest.



Complete these activities at  **Forest Floor**

3

Mindfulness Activity: Sensing Nature

Find a comfortable spot to carry out this activity. Now, try to name:

For a more adventurous experience, you may wish to explore the Forest Treks!



3 animals you can spot

How might the 3 animals be linked to one another in a food web? Draw it out.



2 things you can touch

What materials are the 2 items made of?



1 thing you can hear

Draw the animal or object that produces the sound.

Dr Lillyn Teh Rock Cascade

There are more than just trees in rainforests. Large rocks, waterfalls and streams are also present in rainforests.

These different features provide animals with a range of food sources and shelter options. You can see these features in **Dr Lillyn Teh Rock Cascade**.



Complete these activities at  **Dr Lillyn Teh Rock Cascade**

4

Designing a habitat

Designing a habitat is a complex process with many considerations for the animals' needs. The habitat design should encourage the animals to display natural behaviours. Investigate the Tiger Waterfall habitat where our Malayan tigers roam.

- a. List down 3 considerations when designing a conducive home for Malayan tigers.

Hint: Use the sign boards around you to learn about the tigers' needs and characteristics.

Apart from the animals' needs, designers must also consider the requirements of the keepers and visitors to create a good habitat.

- b. What factors are important to the keepers and visitors? Write them down and include one design observation of the habitat that addresses the requirement of the:

Keepers: _____

Visitors: _____

The Canopy

Canopy layers occupy the second highest rainforest level, formed by a thick layer of leaves. More animals live in the canopy than other layers as there are lots of food there. Animals that live in the canopy can leap, climb or fly well.

Walk through **The Canopy** in Rainforest Wild Adventure (WEST) for a chance encounter with animals that live here.



Complete these activities at  **The Canopy**

5

Primate trouble

Primates that inhabit the canopy are arboreal, spending most of their time in trees. They seldom come down to the ground since everything they need is available in the trees, and staying aloft helps them avoid danger.

- a. How do arboreal primates obtain water to survive since they do not descend to the forest floor often?

- b. What dangers might they encounter on the forest floor?

The primates featured in The Canopy are threatened. The populations in the wild have declined drastically due to threats such as deforestation, poaching for food and the pet trade.

- c. Pick one threat mentioned above and describe how it would affect a primate.

Watering Hole

Rivers and streams can be found along the forest floor. Some rainforest animals visit them to drink and get food, while others spend part or all their life in water. Many animals use rivers and streams to escape from predators. Try to spot the animals that might be visiting the **Watering Hole**.



Complete these activities at **F Watering Hole**



Sun Bear



Malayan Tapir



Estuarine Crocodile

6

Whose home is the best?

Each habitat is specially designed to cater to the animals' needs. Listed here are the characteristics of the sun bear, Malayan tapir and estuarine crocodile.

Characteristics & Natural Behaviour

Sun bears are excellent climbers. They use their long tongue to reach insects and honey hidden in the smallest spaces.

Malayan tapirs are fast and agile swimmers. They enjoy a dip in the pool to cool off or wash away skin parasites.

The body temperature of an **estuarine crocodile** changes with its surroundings. When they feel cold, they bask need the sun to warm up.

Which part of the habitat is designed to cater to this animal? Explain.

The Cavern

Caverns are caves with underground passages and chambers, featuring distinctive rock formations. Cave racers, equipped with special adaptations to climb walls, often enter caverns to hunt bats and swiftlets. Cockroaches feed on bat poop, while scorpions hunt cockroaches and other invertebrates. Explore **The Cavern** to learn more about these animals.



Complete these activities at  **The Cavern**



Cave Racer



Madagascar Hissing
Cockroach



Asian Forest Scorpion

7

Animals that live in caves or visit them to look for food have developed various methods to navigate in the dark.

How do cave animals sense their surroundings to navigate, forage or hunt?

Hint: Find the animal signages

8

Singapore's Wildlife

- a. The Asian forest scorpion is native to Singapore. You can find this invertebrate in our forests. Which layer of a forest can you spot it.

- b. How should you behave when you encounter wildlife and explain why it is important to do so?

Answer Sheet

The Karsts [Page 7]

Q1 Suggested Answers:

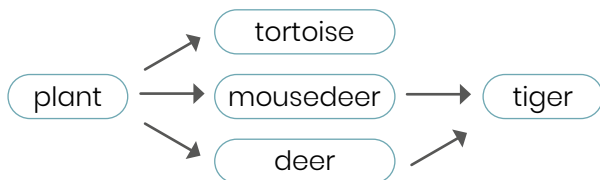
- Long limbs to swing from place to place
- Long, muscular fingers for better grip
- Long tail to provide them with balance as they move around
- Slender, streamlined body to move across the landscape nimbly

Q2: A monkey has a tail, while an ape does not.

Forest Floor [Page 9]

Q3 Suggested Answers:

 Example of a possible food web:



 Materials of metal railing, foot path, benches, leaves, soil etc

 Drawing of animal calls, wind, leaves swaying, voices etc

Dr Lillyn Teh Rock Cascade [Page 10]

Q4a Suggested Answers:

- Safety
- Suitable areas to feed, rest, and hide.
- Enrichment devices or toys to keep active
- Big area for the tigers to roam
- Water body for the tigers to swim

Q4a Suggested Answers:

Animal care team:

- Provide appropriate places for animals to rest, feed and play.
- Easy to clean (safety hooks to clip on while climbing and cleaning, rough surfaces to increase friction)
- Safe place to feed the animal (gates, platforms)

Park guests:

- Viewing areas (glass barriers, no obstruction)
- Ease of access (wide paths, shelter)
- Learning about the animals (sign boards)
- Safety (clear barriers, rough walkway to prevent slipping)

The Canopy [Page 11]

Q5(a) Suggested Answers:

- Getting water from leaves, fruits and flowers
- Lick rainwater from leaves/drink dews
- Tree sap
- Small patches of rainwater collected within tree hollows/plants

Q5(b) Suggested Answers:

- Predators that roam the forest floor (arboreal primates are not as agile on the ground compared to swinging across trees)
- Poachers/Humans that hunt them
- Disease and parasites less common in the trees

Q5(c) Suggested Answers:

- Deforestation: loss of home leading to lack of food and shelter
- Poaching: directly reduces number of primates/ not enough animals to breed with one another

Watering Hole [Page 12]

Q6(a) Suggested Answers:

Sun bear:

- Tall, thick tree trunks for climbing
- "Honey pot" enrichment for the bears to dig out their own food

Malayan tapir:

- Pool in the exhibit for them to cool down

Estuarine crocodile:

- Water to cool down, land area with sunny spot for crocodile to warm up

The Cavern [Page 13]

Q7 Suggested Answers:

- detecting vibrations in the water (cave fish)
- detect changes in temperature (thermoreceptors of cave racer)
- echolocation (cave bats)

Q8a Suggested Answers:

Forest Floor, Sometimes Understorey

Q8b Suggested Answers:

- Keep your hands to yourself/ Keep a respectful distance/ Keep your volume low to avoid causing stress to the animals.
- Keep your food to yourself as animals can find their own food / to prevent them from being dependent on humans
- If they are injured, call the animal rescue hotline to seek professional help. Do not move them yourselves.