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Exhibit Inquiry

Rainforest

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Exhibit Inquiry

Rainforest

Have students look for the following exhibits related to living things during their visit to the Ontario Science Centre:

Where to go:

Rainforest (Level 6)



Rainforest

What it's about:

Tropical rainforests are the oldest, richest and most complex systems on Earth. Growing in an irregular, narrow band around the equator, rain forests receive intense sunlight and at least 200 cm of rain a year. They provide a hot, humid environment that encourages lush growth and a diversity of organisms. Our rainforest is one based on the jungles of Costa Rica, maintaining a temperature of 20-30 ° C and almost 100% humidity!

What to say and do:

Trek through the rain forest and use your senses to explore this ecosystem, and discuss the following ideas:

- What is the rainforest environment like? (*e.g. Hot, humid, dense.*)
- What adaptations or characteristics would animals need in order to survive in this environment? (*e.g. Able to tolerate high heat and humidity.*) How well would you do in this environment?
- How is this environment similar to forests near you? How is this environment different?
- Canada does not have any tropical rainforests, but we do have a temperate rainforest. Can you think of which province or territory would have mild temperatures and lots of rain to support a temperate rainforest? (*British Columbia*)
- How many different plants or trees can you spot? What are the different leaf shapes and sizes that you observe? (*e.g. Fat leaves, skinny leaves, smooth surface.*)
- Do any of these plants look familiar to you? (*Many of these tropical plants do well as house plants!*) Back at school or at home, you can research uses of certain tropical plants (*e.g. Coffee, cocoa, medicine, etc.*)
- Can you name a by-product of photosynthesis? Hint: it makes the rain forest feel humid! (*water vapour*)
- What should the future of Earth's rainforests be? Who should decide? What would you do if you were put in charge of the rainforests?

Cecropia Tree



What to say and do:

- Look at the leaves on the cecropia tree (trumpet tree). How would you describe the shape and size of these leaves? (*e.g. Large, fat leaves, resemble fat fingers.*)
- How would the shape of the leaves help this tree get the sunlight it needs? (*Large, broad leaves can capture more sunlight than small, skinny leaves.*)

Epiphyte



What it's about:

An epiphyte is a plant that grows above the ground using another plant or object for support. By growing on other plants, epiphytes can reach positions where the light is better.

What to say and do:

- Look around the rainforest; can you find some epiphytes? (hint: *Look on other trees and on the wall by the waterfall and try to find some epiphytes.*)
- Epiphytes can't get nutrients from the ground. How else could they get the nutrients they need? (*Epiphytes can absorb moisture and nutrients from the air. Some animals, such as frogs, leave their waste behind and the epiphytes get nutrients from the animal droppings!*)

Philodendron or plants with “Drip Tips”



What it's about:

As you would expect, rainforests can get a lot of rain! In some years, over 500cm of rain can fall! That's as high as a two storey house.

What to say and do:

- What would you need to do to adapt to this wet environment? (*e.g. Build a shelter, wear waterproof clothes, etc.*)
- How would you describe the shape and feel of these leaves? (*e.g. Smooth, waxy surface, leaves point down and end in a pointed tip.*)
- How would this help the plant deal with all of the rain that falls? (*The pointed tips allow the extra water to fall off the leaves.*)

Kapok Tree



What it's about:

The Kapok tree is a gigantic tree of the canopy and emergent layer. In the Rain Forest, it will grow to be one of the taller trees, about 60-70m tall. It also has spikes on the trunk of the tree.

What to say and do:

- Where are these spikes located? (*On the trunk of the tree, only up to about 15 feet.*)
- Feel the bumps on the tree; what do they feel like? (*e.g. Pointy, sharp.*)
- What do you think is the purpose of the spikes on the trunk? (*Prevents animals from climbing it.*)
- Can you think of any other plants or trees that would have spikes on them (*e.g. Thistles, cactus, etc.*)

Where to go:

The cases near the exit from the Rainforest



Poison Dart Frog

What's it about:

Poison Dart Frogs get their name from the toxins secreted in their skin that are collected by humans and used on the tips of darts.

What to say and do:

- Can you describe the environment of the poison dart frog? (*Humid, lush, lots of hiding places – under logs, near rocks, etc.*)
- What colours do you notice on the frogs? (*Colours vary depending on species, but can include red, green, yellow, blue and black.*)
- Why do you think these animals are so brightly coloured? (*Warning colouration tells other animals to stay away.*)
- Can you think of other animals that have warning colouration? (*Some snakes, bees, wasps and monarch butterflies.*)
- Can you think of other brightly coloured creatures? What are some other reasons for such bright colours? (*e.g. To attract a mate.*)

Where to go:

Near the entrance to
the Rainforest



Clever Cockroaches

What's it about:

Insects can evolve and adapt quickly to many different environments. Take a look at the Giant Cave Cockroach and the Hissing Cockroach to learn more about how these creatures have adapted to their habitat.

- How does an exoskeleton (skeleton on the outside) help these cockroaches survive? *(The hard exoskeleton acts like armour to protect the cockroach.)*
- What other animals have an exoskeleton? *(E.g. - Other insects like grasshoppers and ants, crustaceans like crabs and lobsters, and shelled molluscs like snails and oysters)*

Giant Cave Cockroach

- What adaptations does each insect use to avoid predation? *(They have a foul odour.)*
- Can you distinguish between adults and juveniles? Describe the differences. *(Adults are beige with dark spots and wings, while juveniles are dark brown and without wings.)*

Hissing Cockroach

- How would you describe this insect? *(Shiny, brown, no wings, spurs on its legs, males have bumps near the head and females do not.)*
- Why do you think this insect would hiss? *(If they are being bothered, if the males are trying to impress the females and if the males are trying to get rid of other males.)*
- Can you think of a way that they hiss? *(They push air through "spiracles" on their bodies.)*
- What physical adaptation do the males have for fighting? *(Horns on their heads.)*

Resources

Rainforest

Vocabulary

Adaptation	Any change in the structure or function of a living thing that allows it to be better suited to survive and multiply in its environment.
Arboreal	Living or spending the majority of time in the trees.
Camouflage	Hiding by appearing to match or blend with the environment.
Characteristics	Typical, distinctive or peculiar qualities that help identify plants and animals.
Ecosystem	Any environment where living and non-living things interact with each other.
Ectothermic	Cold blooded, deriving energy from external temperature sources such as the sun and ambient air temperature.
Environment	The air, water, minerals and other living things surrounding and affecting a given organism (plant or animal).
Rain forest	A forest, usually of tall, densely growing evergreen trees in an area of high annual rainfall.
Warning Colouration	The conspicuously recognizable markings of an animal, such as a skunk, that serves to warn off potential predators. Also called <i>aposematic coloration</i> .
Water Cycle	(or hydrologic cycle) The natural sequence through which water passes into the atmosphere as water vapour, condenses and then precipitates to Earth in liquid (rain) or solid (snow, hail) form, then returns to the atmosphere through evaporation.

Internet Links

Cockroach Facts:

<http://www.roachcom.net/rofacts/>

Information about rain forest plants, animals, and people

<http://kids.mongabay.com/>

Comparing temperate rain forests to tropical rainforests

<http://www.mbgnet.net/sets/rforest/types.htm>

More Information on Temperate Rain Forest

http://www.pc.gc.ca/pn-np/bc/pacificrim/natcul/natcul1_e.asp

PLEASE NOTE: Programs and exhibits are subject to change without notice.