

# SELF-GUIDED TOUR



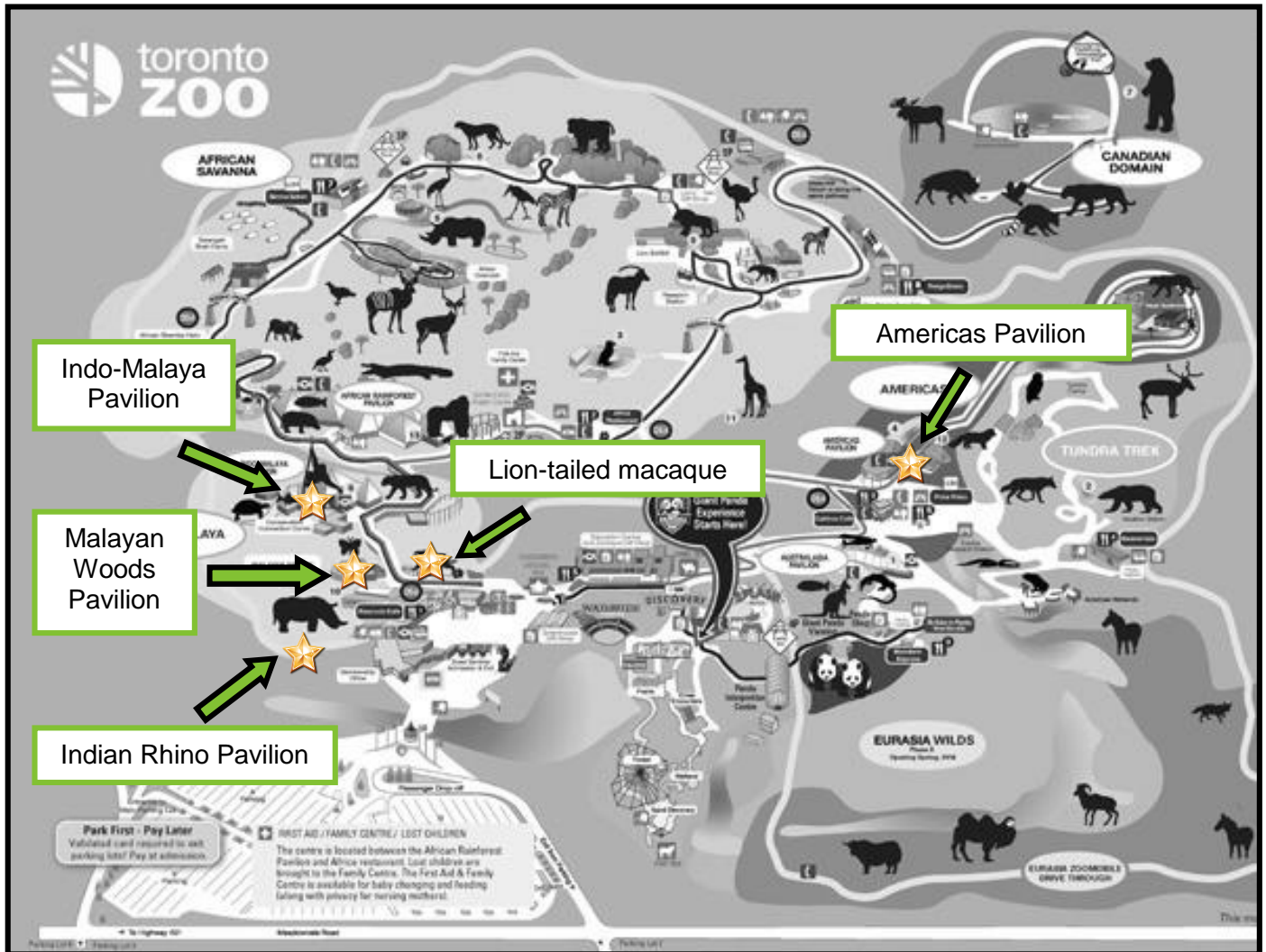
Grade 1

Characteristics and Needs of  
Living Things

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# TORONTO ZOO MAP



### Grade 1 Curriculum Expectations:

1. Assess the role of humans in maintaining a healthy environment
2. Investigate needs and characteristics of plants and animals, including humans
3. Demonstrate an understanding of the basic needs and characteristics of plants and animals, including humans

### Introduction:

#### Review 5 senses - Sight, hearing, taste, smell, and touch

- **Sight:** We can see that a school bus is yellow using our eyes.
- **Hearing:** We can hear when the teacher is speaking using our ears.
- **Smell:** We can smell when someone is making dinner using our nose.
- **Taste:** We can taste that chocolate is sweet using our tongue.
- **Touch:** We can feel that a kitten is soft using our skin.

#### Review Movement

- Movement is vital for an animal's survival (to find food, water, shelter, and space).
- How do we move from place to place? People move around using their legs and feet, and sometimes hands and arms.
- How do animals move? Do they all move in the same way that we do? Think of any animal. How does it get where it needs to go?
- On this tour, we will find out how different animals move from place to place, how they sense the environments around them, and how these characteristics help them to fulfill their basic needs.

## TOUR

### Lion-tailed Macaque

- **How does this animal sense the world?**
  - Macaques see, smell, hear, and feel much the same as we do.
- **Can you find the macaque's eyes, ears, mouth, and nose?**
  - Similar to you and me, a macaque's eyes are on the front of its head. This allows them to judge distance very well, which is helpful for jumping from branch to branch!
- **How do macaques move?**
  - **Are their hands and feet like ours?** Although they look similar to ours, the macaque's hands and feet are much better for climbing. Unlike our feet, a macaque's feet can grab and hold onto things like branches. This is useful because they spend most of their time high up in trees.



## INDIAN RHINOCEROS PAVILION

### Indian Rhinoceros

- **Can you find the rhino's nose, ears, eyes, and mouth?**
  - **Where are the eyes?** Unlike our eyes, the rhino's eyes are on the side of its head. This helps it to see predators that may be sneaking up from behind. Can you see what's behind you without turning your head?
  - Rhinos can't see very well, but they have an excellent sense of smell. They can also hear very well, and can even move their ears to hear sound better from different directions.
  - **Can you move your ears?** Our ears are fixed and cannot turn.
- **How do you think the rhino gets its food?**
  - Rhinos only eat plants.
  - A rhino's lips are very good for collecting food – they are almost like a hand and can grasp objects. This makes them perfect for picking grass off of the ground and leaves from trees.
- **How does the rhino move?**
  - Rhinos move by walking on their four legs.
  - Rhinos have very thick legs. These help to support it, since they are such heavy animals.
- Sometimes you can see the rhino soaking in his muddy water. It may seem unusual, but the rhino is actually using the mud as a shelter from the hot sun.
  - Having a layer of mud over its skin also shields the rhino from annoying bug bites.

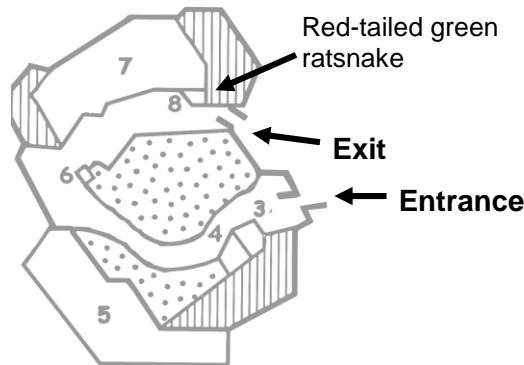


### Malayan Tapir

- **Do you see the tapir's nose?**
  - It is very, very long!
  - In the wild, tapirs are hunted by tigers. To escape from tigers, tapirs hide underwater.
  - They can use their long noses to breathe while staying hidden.
- Just like the rhino, tapirs can move their ears in order to hear sounds better.
- Also like the rhino, the eyes are to the side to see better what's behind them.



## MALAYAN WOODS PAVILION



### Butterflies (around pavilion)

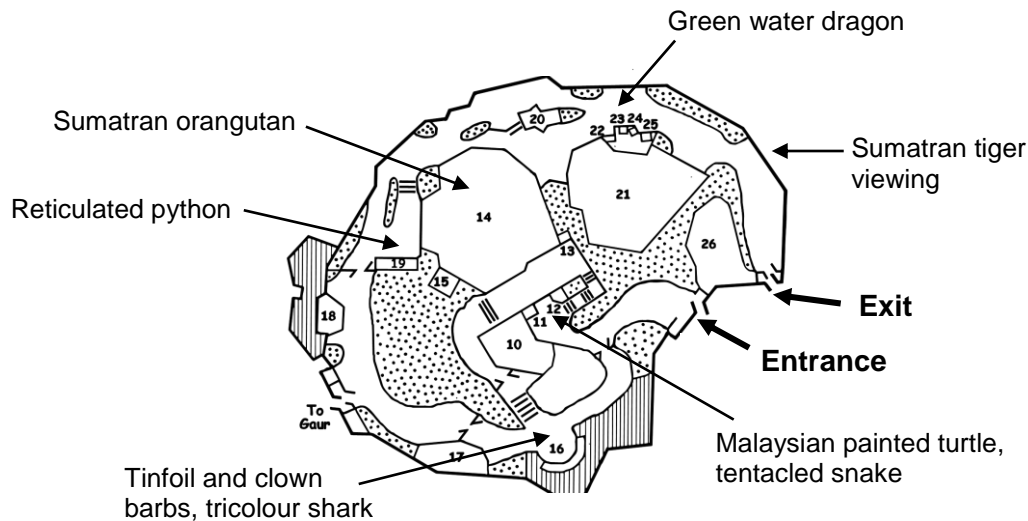
- **How do butterflies move?**
  - They fly using their large wings.
- **Do they have legs?**
  - Butterflies have six legs.
- **Do you see anything sticking out of the butterfly's head?**
  - Butterflies have two feelers or antennae, which are used for both touch and smell.
- **Can you see a mouth?**
  - Most butterflies suck nectar or juices from fruit through a long hollow proboscis (tongue).
  - Butterflies taste using their feet!

### Red-tailed Green Ratsnake

- **How do snakes move?**
  - Snakes move by slithering, using muscles under their skin.
- **Do snakes have ears?**
  - You won't be able to see any ears on a snake! Instead, they are able to feel vibrations through their jaws and hidden internal ears.
- **Why do snakes flick their tongues?**
  - Snakes use their tongues just like we use our noses to smell things.
  - By waving its tongue in the air, a snake can smell if there is a tasty animal nearby to eat.



## INDO-MALAYA PAVILION



### Malaysian Painted Turtle

- These turtles spend a lot of time underwater.
- **How do they move?**
  - Turtles use their webbed feet as paddles to push themselves through the water.
- **Do turtles have ears?**
  - You may not be able to see them, but turtles have ears much like ours. A small layer of skin protects the opening.
- **Why do you think the nose of this turtle points upward?**
  - Much like the tapir, the turtle's upward pointing nose helps it to take a breath while it is underwater.
- **How does the turtle protect its self from predators?**
  - When a turtle is threatened, it can retreat to shelter by tucking its head, legs, and tail into its hard shell.

### Tentacled Snake

- **How does this animal move around?**
  - Much like the red-tailed green ratsnake, the tentacled snake swims by slithering under water.
- **How does this snake hear?**
  - Just like the red-tailed green ratsnake, the tentacled snake also feels vibrations around it through an internal ear.
- **Do you see the funny things sticking out of its face?**
  - These are tentacles.
- **What do you think the snake uses its tentacles for?**
  - Tentacles are used to feel the water around the snake (*note: their usage is debated, although most agree that the tentacles are sensory organs*).

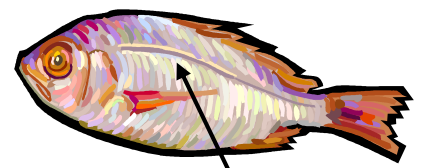
## Sumatran Orangutan

- Take a look at the orangutan's hands and feet. **Are they different from our own?**
  - The orangutan has long fingers and toes, perfect for holding branches. Their hands also have a hook shape to them, and their thumbs are opposable, moving somewhat like our own.
  - These characteristics make tree living easier. As they spend the majority of their time in trees, they can easily hang from a branch using only one leg or arm at a time!
  - Using their hands and feet, baby orangutans are able to stay securely attached to their mothers while they are moving around.
  - Their useful limbs also allow them to make the nests which they sleep in at night, high up in the trees.
- Orangutans look very similar to ourselves. **We walk around on the ground all of the time, but can an orangutan move easily on the ground?**
  - Orangutans cannot walk on the ground like we can. Take a look and you can see that their legs are shorter than their arms. Their legs are also weaker than their arms. Walking on the ground is much more difficult for them.
- **Is their mouth the same as ours?**
  - Unlike our lips, an orangutan's lips are almost like a third hand. They are long and can be used to grasp fruit while hanging from trees.
- **Where are their eyes located?**
  - Their eyes are on the front of the head, like the macaques' eyes, which allows them to judge distance well.



## Tinfoil Barb, Clown Barb, Tricolour Shark

- **How do fish move?**
  - Fish use their fins to push themselves through the water.
- **Do fish have ears?**
  - Like snakes, fish have internal ears that we cannot see. These special ears help the fish to balance.
  - Fish sense sound vibrations through the lateral line. Look and see if you can spot the lateral line, which is usually visible. It begins at the gills/behind the head, and continues to the base of the tail.
  - The lateral line also helps the fish determine balance and feel currents.



Lateral Line



## Various Birds – Mandarin ducks, white-crested laughing thrush, etc. (around pavilion)

- **How do these animals move?**
  - The birds here move in different ways. They can fly using their wings, or walk with their legs.
- Ducks spend a lot of time in water. **How do their feet help them to move?**
  - A duck's feet are webbed, just like the turtle's, so they can use their feet as paddles.
- **Do birds have ears?**
  - Birds do have ears, but they are hidden from sight under the feathers of the head.
- **What is special about a bird's mouth? Is it like our mouth?**
  - Birds have beaks instead of mouths. Different shapes and sizes of beaks/bills can help them retrieve food from underground, in trees, or underwater.
  - Some birds have very hard beak tips, which help them crack through nuts or shells to eat.
- **Do birds chew their food like we do?**
  - Most birds cannot chew their food. Instead, they swallow everything whole!
- Beaks are not only used for eating; they are also used for grooming feathers.
- Some birds, like ducks, have sensitive beaks which they use to feel what is around them in the water.

## Reticulated Python

- Pythons and some other snakes can sense heat using special holes around their mouths. These pits help the snake find warm-blooded animals for food, like deer, antelopes, and pigs.
- See if you can spot the heat pits on the python's upper lip. This is where it can sense heat.
- **Can you guess how this snake captures its food?**
  - It captures its prey by seizing them with its mouth and then quickly coiling around them squeezing their body. When the prey breathes out, the snake squeezes harder so the animal cannot breathe in again.



## Green Water Dragon

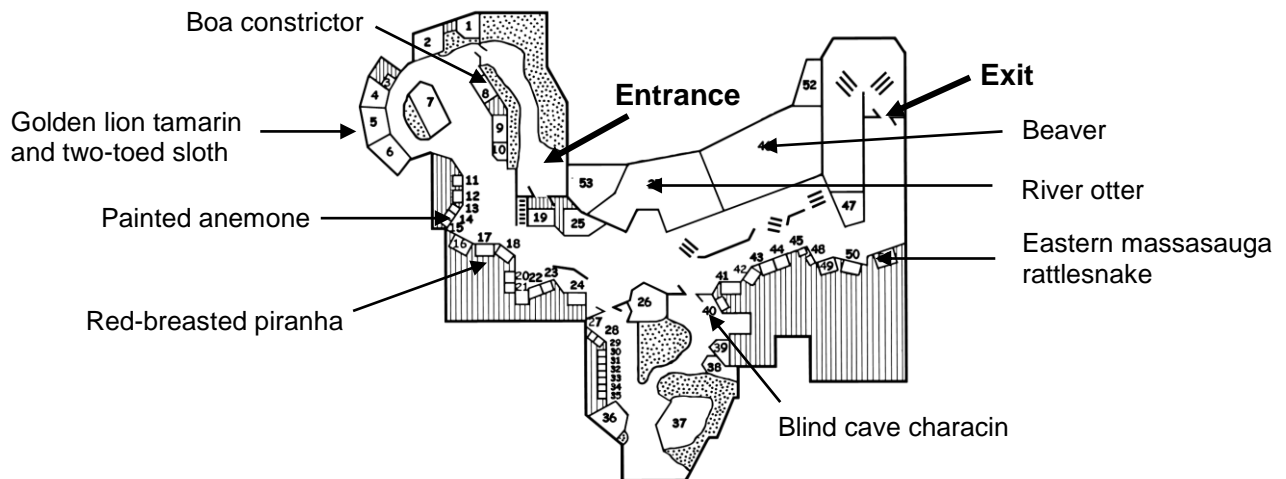
- Take a look at the dragon's feet. **How do its feet help it to move on fallen branches and other surfaces?**
  - Green water dragons have long toes and nails to grip things.
- Look at the dragon's head. **Do you see a small, shiny scale in between its eyes?**
  - This is a special third eye. It helps the dragon know how light it is around them.

## Sumatran Tiger

- **How does the tiger move?**
  - Tigers walk on all four legs. Their legs are powerful, helping them to run and pounce.
- **Why do you think the fence is so high?**
  - Tigers are very good jumpers.
- Their powerful limbs allow them to sneak up on deer or wild pigs and attack with a couple of great leaps.
- **Can the tiger move its ears?**
  - Much like the rhino and tapir, the tiger can move its ears.
- **How do movable ears help the tiger?**
  - It can listen for sounds in different directions without turning its head.
- **Can you see its whiskers?**
  - We learned about whiskers at the clouded leopard exhibit. Whiskers help the tiger to feel things close to its face in the dark forests where it lives.
- Tigers hunt at night, and like the clouded leopard, they also have large eyes and very good night vision.



## AMERICAS PAVILION



### Boa Constrictor

- **Do you remember how snakes move?**
  - They use special muscles to slither along the ground.
- **How does the boa constrictor smell?**
  - It uses its tongue.
  - Having a forked tongue allows the snake to determine which direction the smell is coming from.



### Golden Lion Tamarin and Two-toed Sloth

- **How does the tamarin move?**
  - Tamarins use their hands and feet to jump between branches.
  - They are able to move very quickly.
- **How does the sloth move?**
  - The sloth also moves with its hands and feet but a lot slower than the tamarin.
- Look at the shape of the sloth's feet – **What do you notice?**
  - The sloth has giant curved claws, which help it hold onto branches. Sloths find shelter in trees, rarely going to the ground, so these claws are very important.
  - The claws also help young sloths hold onto their mothers.
  - Eagles and jaguars are the main predators of the sloth. Since sloths cannot move quickly, their claws are their only means of defense when attacked.



## Painted Anemone

- The anemone senses its environment differently than we do. Look at all of the arms sticking out of it. These are called tentacles.
- Anemones use their tentacles to smell and feel the water around them. The tentacles tell them if food or danger is nearby.
- **Do you see this animal's mouth?**
  - It is located at the centre of the tentacles.
  - The anemone uses its tentacles to catch food and bring the food to its mouth, just like we would use our arms, but the tentacles also help the anemone sense the environment around it.
  - When the tentacles sense danger, the anemone closes up to protect itself.
- **Where are the anemones' feet?**
  - The anemone actually has one foot, hidden from view underneath it. The foot has a sticky pad which helps the anemone stick the ground.
- Anemones do not usually move from their place on the sea floor. **Why do you think an anemone might decide to move?**
  - Anemones break from the ground and swim to a new area if they are being attacked by a predator, or if they need to find a new home to fulfill their needs for food, water, and space.
- To swim, anemones flex their bodies, kind of like a jellyfish does.



## Red-breasted Piranha

- **How does the piranha move?**
  - Piranhas, like other fish, use their fins and tail to move through the water.
- The piranha has a very strong sense of smell, which helps it to find its prey.
- **How does it detect movement in the water?**
  - Like other fish, the piranha uses its lateral line to detect movement.

## Blind Cave Characin

- **Do you see the characin's eyes?**
  - You probably can't see any eyes on most of these fish. When characins are young they have eyes, but as they grow older their eyes sink into their heads and are covered by new scales.



- Since they live in very dark areas, eyes are not of any use to them.
- **How do you think the characin senses its environment if it can't see?**
  - The characin can sense vibrations in the water around it using its lateral line, just like we learned earlier with the barbs.
- Characins also rely on their sense of smell to know what is nearby. They have no trouble finding food!

## River Otter

- **How do the otters move?**
  - Otters can both run on land and swim in the water using their four legs and thick tail. Like turtles, otters have webbed feet for swimming.
  - Otters have an oil gland that is used to make fur more streamlined and waterproof, which helps them to move quickly underwater.
- **Can you see this animal's ears?**
  - An otter's ears have a special flap of skin which closes when they go underwater to help protect them.
- **What do you think the otter uses its whiskers for?**
  - Just like leopards and tigers, the otter's whiskers help it to feel what is around it. Instead of hunting in a dark forest like the large cats, otters must hunt for their food in murky waters.

## Beaver

- **How do the beavers move?**
  - Similar to otters, beavers can both swim in the water and walk on land. Their webbed feet and large tail are used to help with swimming.
  - The beaver has a waterproof coat for swimming.
  - A membrane protects their eyes underwater.
- **Do the beaver's teeth look like ours?**
  - Beavers have very large front teeth. These teeth are used to chop trees for building their shelters called dams or lodges.
- Whole families of beavers live in one single lodge, and all help with gathering food and building.
- When threatened by a predator, the beaver uses its tail to warn other beavers that something is wrong. It flaps its tail, hitting the water very hard to make a loud noise.



## Eastern Massasauga Rattlesnake

- This snake is often very active. See if you can spot what we learned earlier – how snakes move using muscles under their skin to slither. **Do they make an ‘S’ shape?**
- Look at how the snakes use their tongues to smell by flicking them in and out of their mouths.
- **Do you see any heat pits on this snake?**
  - There are two heat pits at the front of the face near the nostrils. The rattlesnake uses these just as the python does to sense heat from possible prey.



### Conclusion

All of the animals we saw today have their own ways of sensing the world around them, and using their abilities to fulfill their needs for food, water, shelter, and space.

#### **Possible discussion questions:**

- Do animals sense the world in the same ways that we do?
- What are some senses that animals have that we do not?
- What animal do you think has the most interesting way of moving? Why?
- Would you want to move or sense like a certain animal? What would it be?