

## Animal Super Senses Field Trip Package



### Description

This field trip is designed for students to learn how our five senses may differ from those of certain animals. This includes sight, sound, smell, taste and touch. Students will also explore different biomes, their characteristics, and the impacts these different areas can have on the lives of the animals who call those biomes home.

This information package can help you summarize ideas to help you get the most from your trip to the zoo.

### Links to the New BC Curriculum

#### Grade 4

- All living things sense and respond to their environment (*Big Ideas*)
- Sensing and responding; the 5 senses and special animal senses (*Content*)
- Biomes are large regions with similar environmental features (*Content*)
- Demonstrate curiosity about the natural world (*Curricular Competencies*)
- Make predictions based on prior knowledge (*Curricular Competencies*)
- Make observations about living and non-living things in the local environment (*Curricular Competencies*)

### Preparing for the Program

**Location:** In the primary years, this will be many students' first visit to the zoo, and feeling prepared will help ease any nervousness some younger students may have about visiting a new place. These are some things that teachers should review with their students prior to and upon arrival at the zoo.

- Where the zoo is in relation to your school.
- Duration of the trip to the zoo and mode of transportation to the zoo.
- Designated meeting place set out at the zoo in case any adult or student gets separated from the group, and point this out on the map upon arrival.

**Vocabulary:** Before attending the zoo, students should be aware of the following words as they may be used during the program.

- **Biodiversity:** the variety of different types of living things in an ecosystem.
- **Biomes:** large regions with similar environmental features (e.g., climate: long-term weather patterns).
- **Carnivore:** an animal that only eats other animals.
- **Chaparral:** a type of biome commonly called the scrub biome. It is characterized by being very hot and dry, with minimal rain.

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- **Conservation:** the protection of plants and animals who are facing threats in the wild.
- **Ecosystem:** a community of living organisms in relation to the non-living things in their physical environments.
- **Habitat:** where an animal lives to find food, water, shelter, and space.
- **Herbivore:** an animal that only eats plants.
- **Omnivore:** an animal that eats both plants and animals.
- **Taiga:** a type of biome also referred to as the coniferous or boreal biome. Characterized by long, cold winters and short, mild summers with high rain throughout the year.

**Dressing for the weather:** There are not many indoor or covered areas at the zoo, so it is important to dress for the weather.

- If raining: waterproof shoes and jackets are necessary. Umbrellas are optional.
- If sunny: sunscreen, hats, and water bottles are necessary.

**Rules:** Here at the zoo, we want you to have fun, but our priority is the safety of our visitors and animals. These rules will help keep you and the animals safe.

- Do not feed the animals.
- Do not touch the animals.
- Respect all barriers and fences.

## **Information Guide**

Within the animal kingdom, there are five senses used to gather information about the environment: hearing, sight, smell, taste, and touch. These senses help animals interpret the world around them by gathering information, which is sent to the brain, allowing the animal to decide on what to do with this information. They can be used to find food, keep in contact with members of their group, find mates, and more.

Hearing is essential for many animals. Prey will use a good sense of hearing to evade predators, while predators will use hearing to help them locate prey. The sense of hearing for all animals is done via their ears. When things make noise, such as a rabbit munching on grass, it makes sound waves that travel through the air. When they arrive at another animal, such as a coyote, their ears pick those sound waves up. The shape of the ears are specifically adapted to funnel sound into the ears. When sound waves enter the ear canal, they cause the ear drum deep inside the ear to vibrate.

This vibration is passed deeper into the ear until it gets to the cochlea, which sends a signal to the brain. It is the brain which determines what the noise is and then the animal can decide on what to do with this information. If it was a coyote who had heard the rabbit munching on grass, it might decide to move in the direction of the sound to find its dinner!

Sight is another very useful sense for many animals, with the eyes being the sensory organ which gathers the information. Where the eyes are placed on the body of the animal is not by chance, but for good reason. Prey typically have their eyes on the side of their heads, so they can always see all around their body, to watch out for predators. Whereas predators typically have their eyes on the front of their face, to allow them to keep prey insight while they hunt.

A handy rhyme to remember: 'Eyes on the side, meant to hide. Eyes on the front, meant to hunt'.

Taste is a lesser-known sense but is just as important as all the others. For humans, we use our sense of taste to ensure we don't eat any food which is dangerous, such as sour milk or bad meat, which is important for our survival. The tongue can detect temperatures, textures, and flavours and it can 'taste' five main flavors: sweet, sour, salty, bitter, and umami (rich, savory). Tasting is done by taste buds, which are little grooves on the tongue, filled with taste hairs. When the taste hairs come into contact with food, they send signals to the brain about the taste.

Other animals will use their sense of taste, or tongues, just like humans, but some animals have unique ways of using this sense. Catfish, who live in extremely muddy waters, can't rely on their eyes to find food. Rather, they have taste buds covering their whole body, with most of them located on their whiskers. This allows them to taste when dinner is nearby and where it is located.

The sense of smell is vital for animals in many ways – from finding their food, locating a mate, figuring out territory boundaries, and more. However, it is one of the least

understood senses. What we do know is that the air is full of molecules given off by everything – flowers, bacon, popcorn, skunks, etc. When these little molecules in the air enter our nose, the smells bind to receptors in your nose, which send signals to your brain, telling you what the smell is.

Now smells in the air tend to drift down, so animals who are low to the ground, such as dogs, badgers, and porcupines have a better chance of picking up all the smells in the air than we do. Even the large elephants, who have the best sense of smell in the animal kingdom, have their nose close to the ground!

The sense of smell can be a powerful tool to avoid danger or bad food. Humans and other animals are programmed to avoid these bad smells. Skunks and other animals use this avoidance to their advantage; by releasing that foul smell, it stops predators from eating them as they smell too bad to eat!

The final sense is touch, which can give humans and animals alike a variety of information about the environment around them. While human skin is full of touch receptors, the strongest ones are in our fingers – which we use to navigate our lives. These touch receptors tell us when something is hot or cold, the texture of items, or where we are in relation to other items.

For animals, the sense of touch is important for them when moving around their environment. Cats have whiskers which they use to navigate small spaces. If the whiskers aren't touching anything, the cat knows it can fit through. Animals, such as primates like baboons, will use touch as social bonding, these social bonds can be essential to the group's survival. Vampire bats will groom each other and form bonds; if a bat is ever unable to get its food overnight, it can go to the bats it made friendships with and they will regurgitate blood into its mouth.

Animals use one or more of these senses to find food, stay in contact with members of their group, avoid predators, find mates, and more. These senses can also give them information about their habitats – where water is, temperature, location of shelter and more. Animals have all adapted to use their senses in a wide variety of ways to respond to their environment!