

Animal Super Senses Field Trip Package

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Description

Students will learn about different animal senses and how animals use their unique senses to respond to changes and other animals in their environment. 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 package contains a variety of different activities and resources that educators can use to enhance students' learning with regards to animal super senses. There are also activities included that educators can print out and use during their field trip to the Greater Vancouver Zoo, as well as pre and post field trip activities for grade 4.

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.
- *Conservation:* the protection of plants and animals who are facing threats in the wild.
- *Ecosystem:* a community of living organisms in relation to the nonliving 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.
- Do not climb the fences.

Pre-Field Trip Activities

- Teachers may use the Information Guide in this package to help introduce certain terms that may be used during the Super Senses Program at the zoo.
- Use the Super Senses worksheets to provide background information prior to the field trip to the Greater Vancouver Zoo.
- Complete Senses Activities on pages 7-8 to see senses in action.

During Field Trip Activities

- There are three different Scavenger Hunts: the North American Route, African Route, and the Asian Route. Answers can be found on the signs at each animal's enclosure. These printable Scavenger Hunts can be found on our website.
- Students can use the Field research note worksheet to discover more about an animal of their choice, by learning some basic facts from our signs and use what they've learned thus far to make predictions about the animal's biome and super senses.

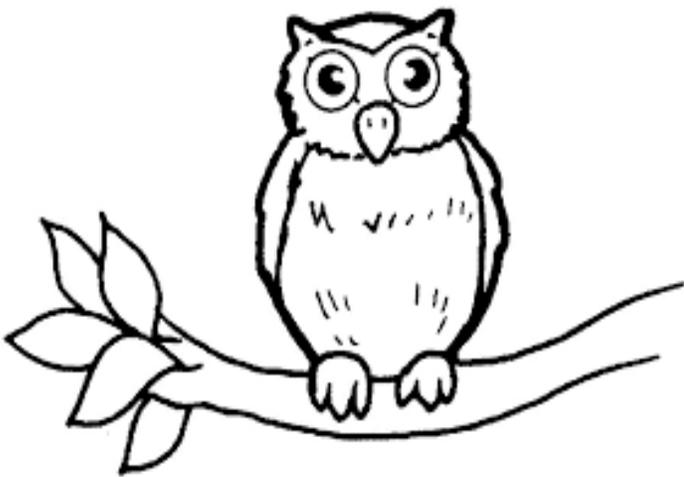
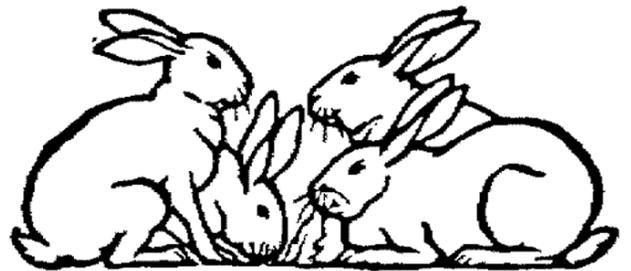
Post Field Trip Activities

- Use the Scavenger Hunt to determine how the animals in that particular ecosystem are interconnected in the web of life.
- Use the coastal rainforest and Arctic tundra worksheets to work on understanding diverse biomes and the animals who live there. Have students create their own biome.
- Make students match the senses to each animal using what they learned from their field trip tour.
- Students use the information they have learned about the animals at the zoo to complete the crossword puzzle.
- Have the class take part in super senses jeopardy to test their knowledge of all the senses and how animals use them.

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.

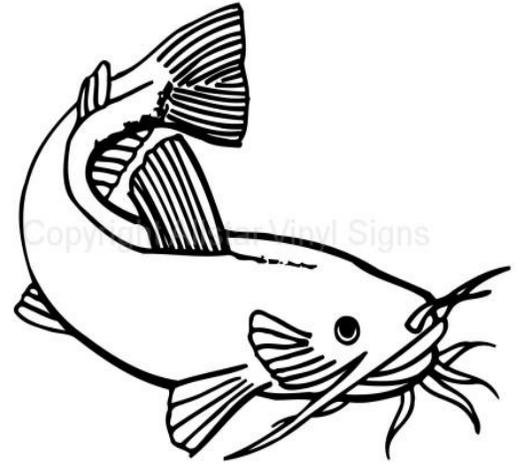
Hearing is essential for many animals. Prey will use a good sense of hearing to evade predators, while predators will use hearing to help them locate prey. The sense of hearing for all animals is done via their ears. When things make noise, such as a rabbit munching on grass, it makes sound waves that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



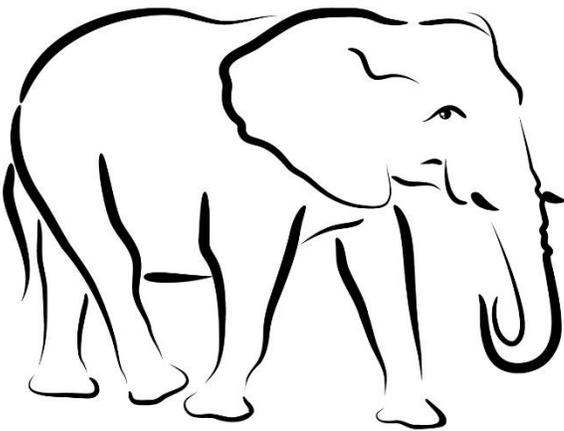
Sight is another very useful sense for many animals, with the eyes being the sensory organ which gathers the information. Where the eyes are placed on the body of the animal is not by chance, but for good reason. Prey typically have their eyes on the side of their heads, so they can see all around their body at all times, 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.

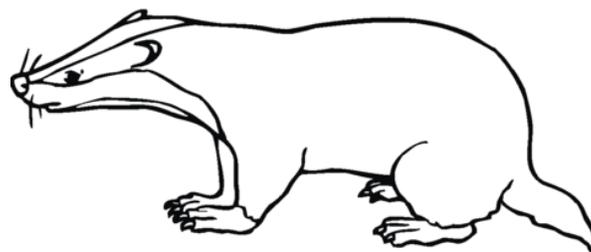


Other animals will use their sense of taste, or tongues, just like humans, but some animals have unique ways of using this sense. Catfish, who live in extremely muddy waters, can't rely on their eyes to find food. Rather, they have taste buds covering their whole body, with most of them located on their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



Pre-Activities

Discovering the Senses

What to do:

1. Set up the kitchen table with some of the following items: some different tastes (ex: sweet, sour, salty), some items with different textures (ex: smooth, soft, rough), some closed containers with different sounding items inside (ex: cotton balls, marbles, pennies), some cotton balls with drops of different food extracts (one extract per cotton ball).
2. Put a blindfold on your child and start with the different tastes. Have your child try to identify the taste without being able to see the food. As you move across the table (and the senses) be sure to talk with your child about using different senses to gather information. Ask questions about how the touch items feel, how the different containers sound. Have them compare and contrast how easy or hard it is to identify different items using one sense at a time.
3. Afterward you can have your child test you in the same way. Mix up the items and see how well you do identifying each using only one sense at a time!

Test your binocular vision

Chameleons have eyes that move independently of each other. When they locate prey, both eyes must be focused on the prey before they strike with their long tongue. In other words, they require binocular vision to target their prey. A comparison for humans would be to think about the difficulty judging depth perception by taking aim at an object with one eye.

What you need: Party blower, yogurt container, a small wad of paper

What to do:

1. Place the container upside down on the table
2. Place the wad of paper on top of the container
3. Crouch down so you are level with the ball and within 15cm of it. Put the party blower in your mouth
4. Close both eyes and count to ten. Open one eye, blow into the party blower and try to blow the paper off the container (In most case, you will miss)
5. Repeat step 4 but this time, open both eyes. You should find your aim is better with both eyes open

Test How Your Ears Work

When you hear a sound you hear it first in one ear and then the other. The first ear to hear the sound is usually the one closest to the source of the noise. This allows you to determine where the sound is coming from. This sense helps animals avoid danger, find food and locate their mate or offspring.

What to do:

1. In the middle of a room, have student(s) close their eyes
2. The teacher will then stand somewhere in the room and clap their hands
3. When the student(s) hear the sound, have them point in the direction of the sound
4. Move to another location in the room and clap hands again while the student(s) try to locate the direction of the sound
5. This time, have the student(s) cover or plug one ear with a finger and repeat this activity. What changed? They should find it easier to determine where the sound is coming from when both ears are working together

Test Your Nose

What to do:

1. Take 5-10 jars and cover them with material so the inside of the jar cannot be seen
2. Add different food items to each jar, covering the tops of the jars with tissues and securing with a rubber band
3. Give students the chance to smell each container. See if they determine what food is inside each jar and what animal eats it

Some examples of food items to try could be grass (zebra, deer), honey (bears), bananas (monkeys, parrots, bats), carrots (rabbits, guinea pigs), etc

The Touch Test

For some animals, the sense of touch allows it to find food. Walruses use their whiskers to help them find food buried in the mud by pressing their whiskers against objects. It can tell if the object is a rock or a tasty clam just by whisker touch!

What you need:

- a large bowl or pail
- dry sand to almost fill the bowl
- various edible and non-edible objects such as carrot, peanuts in the shell, a whole banana, a cooked egg in the shell, spoon, a small toy, etc
- blindfold

What to do:

In a large bowl or pail bury the objects under the sand. Blindfold a student and have them use their fingers locate the objects in the sand that are food items.

Field Research Notes

Animal Name:

Animal Illustration:

Physical Appearance:

Weight: _____

Length: _____

Colour: _____

Diet:

Geographic Location:



What Super Senses might this animal have to help it survive?

Which biome do you think this animal lives in?

Coastal Rainforest

1. What does this biome look like? What kind of climate does it have?

2. List some animals that live in the Coastal Rainforest.

3. Draw a food chain that includes animals and plants from the Coastal Rainforest.

Arctic Tundra

1. What does this biome look like? What kind of climate does it have?

2. List some animals that live in the Arctic Tundra.

3. Draw a food chain that includes animals and plants from the Arctic Tundra.

Create Your Own!

In the space below, create your own biome, show the kinds of plants and animals that would live there, what the weather would be like, and any special senses your animals would need to have to get around in their home!

Match the Senses

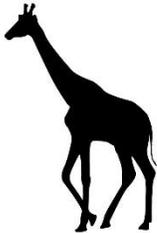


A: Ears

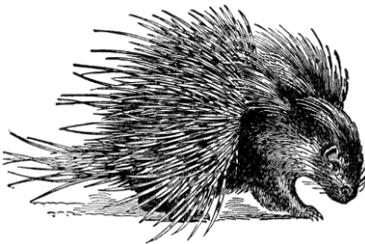


B: Whiskers

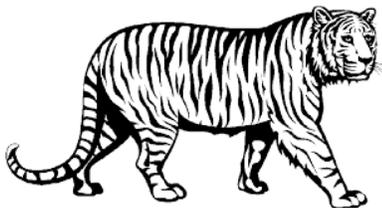
C: Antenna



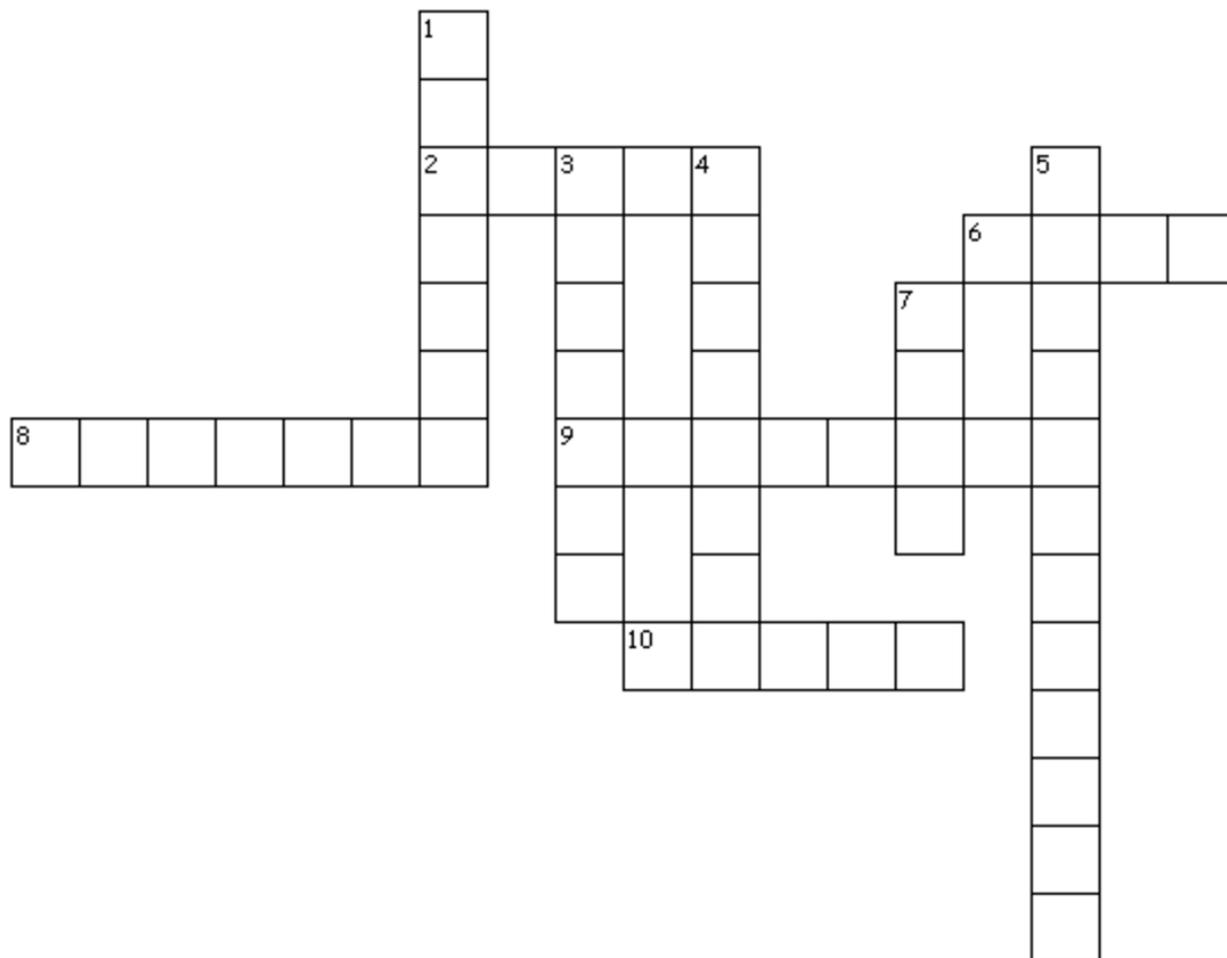
D. Eyes



E. Tongue



Animal Crossword Puzzle



Word Bank

Camel	Cheetah	Flamingo	Giraffe	Hippopotamus
Lion	Lynx	Ostrich	Red Panda	Tiger

Across	Down
2. I have stripes on my skin and I can grow bigger than a lion.	1. Although I am a bird, I cannot fly.
6. I look tougher if my mane is big.	3. I eat for around 20 hours a day.
8. I am the world's fastest four-legged animal.	4. Bamboos make up 98% of my diet.
9. Eating shrimp and krill turns me pink.	5. I can hold my breath underwater, but I cannot swim.
10. I have humps on my back that stores about 80 pounds of fat.	7. I have large paws that help me stay on top of the snow.

Answer Key

Across	Down
2. I have stripes on my skin and I can grow bigger than a lion. <u>Tiger</u>	1. Although I am a bird, I cannot fly. <u>Ostrich</u>
6. I look tougher if my mane is big. <u>Lion</u>	3. I eat for around 20 hours a day. <u>Giraffe</u>
8. I am the world's fastest four-legged animal. <u>Cheetah</u>	4. Bamboos make up 98% of my diet. <u>Red Panda</u>
9. Eating shrimp and krill turns me pink. <u>Flamingo</u>	5. I can hold my breath underwater, but I cannot swim. <u>Hippopotamus</u>
10. I have humps on my back that stores about 80 pounds of fat. <u>Camel</u>	7. I have large paws that help me stay on top of the snow. <u>Lynx</u>

Animal Word Search

D A B G R H B P E I E V X Z W J E O M P A N E K E
 Z L D U R B D S D X R U L S M F P C B Y V M M Q F
 Z T O Q L X O C Z N F Q G Z K F G X X W Q R A T T
 A N I G B O P C G G U H O X F D W O S T R I C H Z
 U H D G M F I J X Z K Z R U B G Z A L N U D A Y X
 T B U E E A P B B C X C Z W U D O C F O R J W Q G
 N J S C F R T S J D K H R V H L V S A G D K X C P
 K O V K A L T Z Z N R B F S N D C M B R Y T Q A A
 K Q N O U O A O H J Z U C P G H B N Y G I Q R K F
 A A V S R D V H S U M A T O P O P P I H O B N Q Y
 Z O U K N N S Z P A U N L V X E J P W D T P O A U
 A W P O S S X T W Y R U S U N G C X T Z C N N U T
 E W U R S G N H C Y B O B F H A T E E H C S N U J
 K I F W Z I Y O D A L N V J R K R D E E R C N I F
 U R G R W Z L T J V I P S K R A W B W R C A B P W
 Q N N F L O W N O J O M I U K T E N E H P B P W M
 I U W S Z F W U N A N M A G K E C B F Z W F R S V
 B H T E L A N D P G D V V N V W I B X M F Y V Y T
 F S E H H N W P P L A B D O I E B A Z G Y T C J L
 S Q N W P E T Z U Y J P Z J E P A S S K O S A N O
 Z Z B Y X D V S V E A B G G L G B J I C F N K W H
 O D G Y A X E U W K V S K L R U O N O G E T A C Z
 C C C B Z G G V P J W S R K A H O X J Q Y O A U A
 L I M K M P X J S M C P Y T H O N N G L M M R D V
 A R I X K P T F M S A N S O Q V Z R F R O G Z A U

OSTRICH

BABOON

LION

TIGER

ZEBRA

ELAND

STORK

MACAW

BEAR

CHEETAH

LYNX

MOOSE

DEER

CARIBOU

FOX

Super Senses Jeopardy

TOUCH	SMELL	TASTE	SIGHT	HEARING
100	100	100	100	100
200	200	200	200	200
300	300	300	300	300
400	400	400	400	400
500	500	500	500	500

TOUCH	SMELL	TASTE	SIGHT	HEARING
<p>100 In humans, what is the most sensitive part of the body?</p> <p>A: fingertips</p>	<p>100 What type of food are ring-tailed lemurs using their sense of smell to find?</p> <p>A: fruit</p>	<p>100 What are the 4 kinds of taste buds in humans?</p> <p>A: sweet, sour, salt, bitter</p>	<p>100 Why is it good to have a good sense of sight?</p> <p>A: any of these - predators, prey, food, or shelter</p>	<p>100 True or false; you can see a great horned owls ears?</p> <p>A: false</p>
<p>200 How do cats know whether they can fit into a small space or not?</p> <p>A: whiskers</p>	<p>200 What is a way collared peccaries' use their snouts other than smelling?</p> <p>A: digging</p>	<p>200 True or false; flamingos have barely any sense of taste?</p> <p>A: true</p>	<p>200 Which animal has the largest eyes of any land animal?</p> <p>A: ostrich</p>	<p>200 How much stronger are the lion's/tiger's hearing than our own?</p> <p>A: 5 times stronger</p>
<p>300 True or false: spiders use the hair on their legs to feel if something has touched their web?</p> <p>A: true</p>	<p>300 True or false: snakes use both their nose and their tongue to smell?</p> <p>A: true</p>	<p>300 What are 2 ways cats use their tongues other than tasting?</p> <p>A: comb fur and spoon to drink</p>	<p>300 True or false: porcupines have great eye sight?</p> <p>A: false</p>	<p>300 Why are Mara's ears so big?</p> <p>A: funnel sound and to help cool them down</p>
<p>400 How would tiny touch receptors around an alligator's mouth help them survive?</p> <p>A: alert them to prey</p>	<p>400 How do you smell with your nose?</p> <p>A: scent receptors in nose pick up scent molecules in the air</p>	<p>400 How do frogs use their tongues to catch insects?</p> <p>A: tongue flicks out of the mouth and is sticky</p>	<p>Why are flamingo's eyes placed on the side of their heads?</p> <p>A: to allow them to see nearly 360 degrees</p>	<p>400 Why is it beneficial for baboons to have a good sense of hearing?</p> <p>A: help to communicate with their troop members</p>
<p>500 What are 2 things the skin is used for?</p> <p>A: keeps the body protected from bacteria & germs. Gives information about environment</p>	<p>500 What are 2 ways animals use their sense of smell?</p> <p>A: find a mate, food, water. Tell them whether prey or predators are around</p>	<p>500 What is the term used for a tongue or tail used like hands to grab objects?</p> <p>A: prehensile</p>	<p>500 What are cat's eyes designed to pick up that is better than a human's eye?</p> <p>A: movement</p>	<p>500 Ring-tailed lemurs use their hearing to help identify different members of their family by?</p> <p>A: pitch</p>