GIRL SCOUTS: Sensational Senses

Overnight Outcomes:

1. Scouts enjoy spending time at the Zoo (Measure –post survey, "We had fun.")
2. Scouts are connected to nature (Measure –informal assessment).
3. Scouts are empathetic for wildlife (Measure –post survey, "We want to help save animals in the wild.")
4. Scouts are motivated to "take action" to reduce threats to wildlife (Measure –post survey).
5. Scouts describe how their personal actions may positively or negatively affect wildlife (Measure –informal assessment).

Good to Know Terms:

Echolocation: also called bio sonar, is the biological sonar used by several kinds of animals. Echolocating animals emit calls out to the environment and listen to the echoes of those calls that return from various objects near them. They use these echoes to locate and identify the objects.

Key Conservation Messages:

Paper – Tree habitats where many animals live are being cut down to make paper and other products. Did you know that the average household uses 120 rolls of toilet paper each year? 27,000 trees are cut down each day to provide toilet paper to the world. These trees are important habitat for primates (like chimpanzees and orangutans) as well as North American species such as black bears, jaguars, and birds. Solution – Houston Zoo uses toilet paper made from recycled paper. You can help by recycling your paper in school and at home, or using both sides of a piece of paper before throwing it away. What other actions can you take to help reduce your use of paper products?

Habitat loss can drastically affect the ways in which animals can communicate with one another and interact with their surroundings. Throughout the night, challenge guests to think about how an animal's senses may be affected when their habitat is polluted, cut down, or encroached upon by humans and what the effects may be on a population's survival.

Materials:

Baby bat game (scent canisters)
Night Song book
Tablet w/ Ecometer
Scavenger hunt
Night vision goggles

Welcome & Introductions

- Guests will be entering at Gate 1, dropping gear off at the stroller gate, and parking in the employee gravel lot. Volunteers and staff will help guide guests to the BEC.
- Encourage restroom use and anything they might need on tour (i.e. jackets and bug spray)
- Kahoot in Auditorium until 7:15pm
- Tell participants: Tonight, we are going to be exploring the Zoo with all of our senses and learning how animals use their senses in similar and different ways!
- Review what the five senses are before heading out on tour

Night Hike I – Bats, mole rats, NE, elephant, giant anteater/Maned wolf, Ankole cattle (SEE)

- Include story about bee fences

    - Elephants have sensitive, although tough skin. The fences keep elephants out of human populated areas and protect people's crops
- Groups are welcome to bring a pair of night vision goggles out to discuss how nocturnal animals have better vision at night than humans do. Participants can take turns trying out the goggles and discussing what they notice differently about their surroundings when using them.
- **Example questions and phrases:**
    - Tell me what you know/notice about this animal.
    - How does this animal use its senses (i.e. get its food)?
    - What do you think this animal's primary sense is? How do you know?

Ambassador Animals – mammal, snake, tarantula (TOUCH)

- Engage participants in conversation about each of the animal's senses and compare them to how we utilize ours. What senses do we primarily use? How does that differ from the animals we have been learning about?
- **Example questions and phrases:**
    - Tell me what you know/notice about this animal.
    - How does this animal use its senses?
    - Is this animal diurnal or nocturnal? How do you know?
    - What does this animal feel like?

Night Hike II – Silent Night Hike (HEAR) & Bat detectors

- Have participants walk silently without flashlights on and try to identify 10 unique sounds. What else do they notice about their surroundings as their eyes adjust?
- Once the group has had the opportunity to identify 10 sounds, explain that some animals have another unique way of listening to or sensing their environment called echolocation. Ask if anyone can explain how echolocation works and what types of animals use it. Then demonstrate it with a volunteer how echolocation works with one person acting as a bug flying around and one person acting as a bat sending out calls to their environment and listening for the echo to locate the bug.
- Introduce the Ecometer to the group and explain how it can pick up bat calls that we cannot hear. For a portion of the walk, your group will be monitoring on the iPad as to whether there are any bats in the area. Discuss factors that may affect bats being in the area (i.e. adequate food, temperature, human light and noise, etc.).
- If your group does pick up bat calls, you can show them how the iPad software is able to identify which species it is. Be sure to share your results with other groups during wrap up!

Snack, Story & Break – (TASTE)

- Have guests explore their snack with new senses
    - How does your food feel? Does it make an interest sound?
- Read Nightsong
- Share personal stories about your work here at the Zoo and Q&A with guests
- **Fun Fact!** Butterflies taste with their feet!

Indoor/Outdoor Activity– Baby Bat or Bat & Moth (Communication: smell and sound)

- Location – BEC or Zoo grounds

Baby Bat How to Play:

Background: Many mother mammals use sight, sound, taste, and smell to recognize their young. In a dark cave mother bats cannot use sight to find their babies. It is thought that mother bats use smell and sound to identify their young. Mexican free-tailed bats find and nurse their own

young, even in huge colonies where many millions of babies cluster at up to 500 individuals per square foot. Mothers and pups recognize each other's unique voices at least three feet away and move toward one other despite the incredible confusion of calls emanating from countless thousands of other bats. Multiple landings are typically required to find a pup, each bracketing its location in a manner suggesting that a mother is triangulating her pup's voice. Finding her young can take as little as 12 seconds to nearly 10 minutes.

- Pair up participants in your group, including parents. Each pair will consist of one baby bat and one mother bat. They will receive one unique scent in a small container (for the baby bat) and will also need to create their own unique call for communicating with each other. Once each participant acting as a mother bat has learned their baby's scent and the pair have decided on their call, separate the two groups.
- Mother bats will start on one end of the space and babies on the other. Mother bats are tasked with finding their babies in all the chaos! Pairs may utilize both their call and scent canister to be reunited. After all pairs have found each other debrief with the following questions:
    - Was it easy to find the baby using the sense of smell?
    - Which way did it seem easier to find the babies? Why?
    - How important is it to know the placement...smell...sound of baby?
    - When we lose something, which of our senses helps us the most in finding the lost item?
    - Is it the same for the bat?
- Additional game: Bat & Moth –see handout

Evening Wrap- Up –

- Pull the kids and adults in, recap what they've experienced. Go over sleeping expectations and explain sleeping arrangements to adults. Lights out by 11pm.

Morning Activities:

- Breakfast at Macaw! Please be wrapped up by no later than 8:15am
- **Senses Scavenger Hunt & Nature Play**: As your group is walking through the Zoo, task them with finding examples of items described in the scavenger hunt using the senses they learned about the previous night (i.e. something spiky, something sweet smelling). You are welcome to have your group stop for 15 minutes or so in Explore the Wild. Encourage them to explore and create using their imagination and senses. Extension: nature art using items found in ETW
- Tour stop options: Sea lions, red panda, Bird Gardens/ BoW, CZ, Giraffe, and cheetah/lion