



Observing Animal Behavior

Engage

This activity is designed to familiarize your students with observing and recording animal behavior. Students will be observing multiple types of animals during your zoo visit. Students will learn basic observational skills, as well as coding and recording behavior and ultimately adding their findings to a master database.

What types of behaviors might elephants exhibit if they are threatened? What types of behaviors might elephants exhibit if they are at play?

1. Begin the lesson by explaining to students that they are going to record data as a biologist would at the zoo. In order to achieve this, they should have a basic understanding of the types of behaviors they may see.
2. Brainstorm and record ideas to the above questions as a class or in smaller groups.

Explore

3. After finishing the discussion, ask students to come up with ways they could investigate their questions and test their predictions scientifically. What tools might they need to carry out their suggested explorations? What kinds of records will they need to keep? What will they do with the information once they have it? How will they know if they have successfully answered their question?

Explain

4. Biologists have a specific way of understanding animal behavior through precise observation techniques. Biologists observe animals in both zoos and in the wild and record their observations. In order to make this process simpler, they create an Ethogram, or list of observed behaviors, prior to beginning their observations. Once this list is compiled, a coding system is created, much like short-hand, to make the recording process much easier.
5. Students will be using the same Ethogram that will be used during their visit to the zoo. Distribute copies of the Ethogram and data sheet in order to familiarize your students with the list of observed behaviors they should be watching for.
6. Students will then be tasked with finding an elephant video to observe. The video should be at least 3-5 minutes in length. Videos can be found in various locations on the internet. Recommended searches include “elephant behavior video” and “elephant observation video”.
7. When students have selected their videos, it is important to remind them that they will be following a process called “scan sampling”. Scan sampling is a method use by biologists to provide an overall picture of how an elephant or elephants are spending their time. It focuses on a sample of times, as opposed to specific times when an elephant might perform a certain

behavior. At a specific time interval, biologists “scan” and record behaviors of all animals in a group or area. They then record a “sample” of the behaviors they see each animal doing at that moment.

8. Students will record their observations every minute on the minute. They may pause the video at each minute mark to properly take the time to code their observations, but make sure they are aware they will be unable to pause the elephants while they are observing at the zoo.
9. Remind the students that they will see many different types of behaviors between each minute while watching the videos, but it is important that they “sample” the behaviors by only recording at specific intervals.

Expand

10. After the students have viewed their videos, ask them what the pros and cons are for scientists to use this method of scan sampling instead of just recording all of the behaviors they see? Different sampling methods all have strong and weak points. Any time a biologist makes an observation, they are recording a sample. A biologist must determine a few things before taking a sample. Which animals are going to be observed and when? And how will they record their observations? These questions help them determine what sampling style is appropriate.
11. Different types of sampling methods can teach biologists about the intensity, frequency, sequencing, and duration of animal behaviors.
12. Students will be using a combination of behavior, scan, and time sampling methods in order to record what a group of animals is doing at specific intervals of time.
13. This type of sampling allows for biologists to gather a range of information and gives them a better idea of how animals are spending their time throughout the course of days, months, or even years. Instead of focusing on the behaviors that may be appealing to the biologist, it allows for large picture of how the animals are spending their time. Focusing on a group of elephants allows for observation of how they interact with each other.
14. However, this type of sampling method would not be able to determine the sequencing or duration of behaviors. For example, if an elephant was wagging its ears for the bulk of the minute, but stopped just in time for the biologist to record, none of the ear wagging would be recorded.
15. Have students refer back to the brainstorming list they made at the beginning of the lesson and determine what behaviors they observed while elephants were at play, and what behaviors they observed when they were threatened? How is an elephant’s body language different during these behaviors?
16. Why is it important to understand animal communication? How can this study help humans and animals interact? What can elephant behavior teach us about our own behavior?

Assess

- 17. Verify that the students' data forms are filled out correctly using the appropriate codes.
- 18. Have students answer one or more of the following questions: What did you learn about elephant behavior today? What did you learn about coding and recording elephant behavior? Define: sample, ethogram, data, and/or behavior.

Standards

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| Ohio Academic Content Standards |
| Grades 5-8 |
| Life Science Topic: Interactions with Ecosystems Organisms perform a variety of roles in an ecosystem |

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|---|
| National Science Education Standards |
| Grades 5-8 |
| Science as Inquiry Abilities necessary to do scientific inquiry Understanding about scientific inquiry Life Science Structure and function in living systems Regulation and behavior Populations and ecosystems Diversity and adaptations of organisms |

Name: _____

Research Plan – Observing Animal Behavior

1. Questioning
State the problem.
Make a hypothesis.



What types of behaviors might elephants exhibit if they are threatened? What types of behaviors might elephants exhibit if they are at play?

2. Planning
Make a plan by asking
these questions
(think, talk, write)



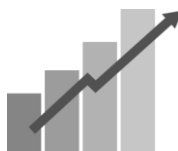
3. Implementing
Gather the materials.
Follow the
procedures.
Observe and
record the results.



4. Concluding
Draw a conclusion.



5. Reporting
Share my results
(informal)
Produce a report
(formal)



African Elephant Ethogram

| Behavior | Abbreviation | Description |
|-----------------|--------------|--|
| Crossing Legs | CL | Elephant is resting with its legs crossed |
| Standing | STA | Elephant is in upright position, not moving |
| Walking | WA | Elephant is moving at a steady pace |
| Running | RU | Elephant is moving at a quick pace |
| Eating | EA | Elephant is using trunk to place food in mouth |
| Drinking | DR | Elephant is using trunk to place water in mouth |
| Defecating | DE | Elephant is standing, expelling feces |
| Urinating | UR | Elephant is standing, expelling urine |
| Swinging Trunk | ST | Elephant is swinging its trunk left and right |
| Trunk Searching | TS | Elephant is using its trunk to search for objects |
| Trunk Holding | TH | Elephant is holding an object with its trunk |
| Flapping Ears | FE | Elephant's ears are moving back and forth |
| Throwing Mud | TM | Elephant is throwing dirt or mud on its body |
| Bathing | BA | Elephant is in the water or spraying itself with water |
| Rubbing Rocks | RR | Elephant is rubbing its side against large rocks |
| Touching Trunks | TT | Elephant is using trunk to touch another elephant |
| Sleeping | SL | Elephant appears to be asleep, eyes closed |
| Laying Down | LD | Elephant is laying down on its side |
| Bobbing | BO | Elephant is bobbing its head up and down |
| Swaying | SW | Elephant is swaying its head or body left and right |
| Trumpeting | TR | Elephant is making a loud noise with its trunk |
| Out Of View | OV | Elephant is not visible to make an observation |
| Other Behavior | Other | Any other behavior not listed |

Animal Behavior Data

Are you observing indoors or outdoors? _____ Date _____

Weather Conditions _____

Start Time _____ End Time _____

Other Conditions _____

| Time | Elephant #1 | Elephant #2 | Elephant #3 | Elephant #4 | Elephant #5 |
|------|-------------|-------------|-------------|-------------|-------------|
| 0 | | | | | |
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | | | | | |