Scientist Spotlight
Teacher Sheet

Activity Overview

The program will provide students with background information about different scientists and experts at Lincoln Park Zoo. Students will use reading comprehension skills to learn about different people and be able to make inferences and draw conclusions from the reading to answer questions about their scientist. Students will then review their answers and have a class discussion on the similarities and differences between scientists. This activity can introduce the work of local scientists in Chicago and help students think how to use inference, analysis, and research skills when conducting their own investigations.

Objective

- Students will draw conclusions and answer questions based on their readings.
- Students will be able to infer how their chosen scientist's research is impactful.
- Students will be able to have group discussions about their selected scientists.
- Students will compare their scientist's research to topics they have learned about in the classroom.

Background Information

Every day, exciting topics are being studied across the world; this is especially true at Lincoln Park Zoo. Researchers, scientists, and renowned experts are a key source of information. Highlighting their achievements, research, and background is a great way to introduce individuals to new ideas.

For this activity, students will use reading comprehension skills to identify the background of a scientist. They will be able to identify what the scientists studied, their research topic, and how that topic is impactful. They should be able to make connections between the research they read about and topics they have studied in class.

How to Prepare

- Find a place in in the classroom or on zoo grounds to do this program.
- Review how to respectfully share ideas with peers.

Procedure

The teacher will introduce the topic "Scientist Spotlight" by asking students what scientists they are familiar with. The answers they share can help students think about how scientists have been able to contribute to today's world. Then, the teacher will explain the activity: Students will read and analyze information about a scientist/expert and learn how that individual has shaped an area of study in a unique way. The teacher will distribute three different scientist/expert bios evenly through the classroom *(Example: In a class of 30, 10 students will have one scientist)*. After reading, they will have 10 minutes to answer the questions attached to the expert bio. Afterward, students will have a class discussion about their scientist and how they know that research is important.

Extensions

Students can develop a list of enrichment items for an animal of their choice based on what they think that animal would like. Encourage them to think about the behavior that each type of enrichment would promote. Back in the classroom, the students can make enrichment for a class pet or a pet at home, such as a decorated cardboard box or a piñata in which to hide a treat.

Connect Across the Curriculum

These are a few ways you can connect your science investigations with other areas of the curriculum.

Math

Have students collect data on the many different types of animals they see in the schoolyard and behaviors they see from those animals. Have them create charts from that data and analyze the information to determine what the animals need from people to be conserved.

Arts

Encourage students to create scientific illustrations of an animal they would like to help conserve and draw factors that affect those animals. (*Example: Elephants and poachers, seals and plastic pollution, polar bears and melting ice.)*

English Language Arts Activity

Have students participate in large or small group discussions about scientists they have read about.

NGSS Standards

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Asking questions Planning and carrying out investigations Analyzing and interpreting data Constructing explanations Developing and using models	5-LS2.A 5-LS2.B	Patterns Cause and effect Structure and function

Illinois Goals and Standards

Language Arts: 4.A, 5.A

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Scientist Spotlight Bio Sheets

Dan Boehm (he/him)

Dan Boehm knew that he always wanted to do something in the world of science. After participating in a few internships at different zoos, he chose to study biology and focused on reptiles and amphibians at the University of Wisconsin. Today, Boehm works in the Animal Care department at Lincoln Park Zoo.

In addition to animal care, Boehm does research focusing on the eastern massasauga rattlesnake. The eastern massasauga rattlesnake helps balance the ecosystem by keeping rodent and insect populations in check and being food for larger birds and mammals. However, as their habitats disappear, these rattlesnakes have nowhere to go, causing their populations to shrink.

Boehm is also the Eastern Massasauga Rattlesnake Species Survival Plan (SSP) studbook keeper. Boehm keeps track of all massasauga rattlesnakes that live in accredited zoos. His database is important for keeping track of the population and making sure that it can grow in a healthy and diverse way. By monitoring population changes, local governments can determine if they need to create laws to protect those animals or if existing laws are working.

One of Boehm's most memorable moments took place while he and a group of students were monitoring Panamanian golden frogs. A disease swept through Central America and wiped out many Panamanian golden frogs in the area—but someone in his group found one of the few remaining frogs surviving in the wild. It was very exciting to find an endangered animal, but also a moment when Boehm recognized that people should do what they can to help animals survive in the wild.

Doing research is not always fun and games. For example, searching for massasauga rattlesnakes involves walking through wetlands, wearing and carrying heavy equipment, and sometimes even getting exposed to plants like poison ivy. It is physically exhausting! Even though the work can be hard, it is very rewarding to follow your interests and curiosity and to view the natural beauty of the wild.

Scientist Spotlight Bio Sheets

Kristine Schad Eebes (she/her)

Before working at Lincoln Park Zoo, Kristine Schad Eebes always liked animals, data, and writing. Over the years, she considered being a science journalist, conservation biologist, or amphibian expert. Eebes obtained a Bachelor of Science degree from the University of Wisconsin, Stevens Point, majoring in both biology and journalism. Later, she got her master's degree in biology from the University of Central Florida. She began an internship at Lincoln Park Zoo, where she learned about the scientific research that goes on at zoos and aquariums.

After her internship, Eebes worked several different jobs before landing her current position as the Director of the Association of Zoos and Aquariums Population Management Center at Lincoln Park Zoo, also known as the AZA PMC. Eebes currently focuses on population biology, which means she monitors different animal populations. She investigates the genetics of individual animals to help manage species in the Species Survival Plan (SSP) Program. The AZA PMC uses science and data to support species in the SSP program and AZA's Saving Animals from Extinction (SAFE) Program. The AZA PMC is like online dating for animals! The goal is to make sure zoo and aquarium populations are healthy.

Eebes' work has both positives and negatives. Eebes' favorite part of her work is learning about the unique characteristics of different species by working with people who dedicate their time to these animals. One species that she has had the opportunity to learn about is the American burying beetle, a critically endangered species. These beetles have an elaborate mating system where the males "battle" each other to determine the best fighter. The winning male then mates with the winner of a similar female "battle." They also take care of their young, which is unusual for a beetle species.

The most challenging thing about Eebes' job can be working with people. Not everyone always agrees on how to support species and that can lead to difficult discussions and decisions. However, everyone shares the same goal—to help animals.

Scientist Spotlight Bio Sheets

Lara Foley (she/her)

Lara Foley has been interested in nature, wildlife, and environmental causes ever since she was a kid. She grew up camping with her family and exploring the outdoors. It was clear to Foley that she wanted to pursue a career focusing on the environment. At Willamette University, Foley completed her bachelor's degree in environmental science. Later, Foley finished her master's degree in natural resource management from the University of Twente in the Netherlands.

She started her work in conservation back in 1998 with her now-husband, who was studying elephants in Tarangire National Park when they met. They lived in a field camp in the middle of the national park. Elephants would come through her camp, lions would drink from the bird bath, and vervet monkeys would try to steal any food. It was a beautiful place to live for so many years and it taught Foley many things about natural history and living with nature. Foley was never scared, as there seemed to be a mutual respect between people and wildlife.

Now, Foley is the Research Coordinator for the Tanzania Conservation Research Program. She works with local organizations and communities in northern Tanzania to help protect wildlife outside national parks. The wildlife is generally safe and healthy in national parks, but they migrate out of the national parks during the rainy season to find higher-quality food and water. When the animals migrate, they tend to wander into villages where people live, farm, and graze their livestock. However, there is now pressure on the community to expand their land to grow food for the increasing human population. When people use more land for farms, it makes it difficult for wildlife to migrate. Helping these communities better understand wildlife helps protect land for both livestock and wildlife. It's a win-win for people and animals!

One difficult thing about conservation work is raising enough money every year. It costs money to hire staff and conduct fieldwork. Foley must draw upon storytelling skills to make her work interesting to the public and funding agencies. It takes good communication skills—written and oral—to write grants and give presentations to attract funding. But campaigning for funds is not the only hard part; she must be able to communicate important messages to local people. The Tarangire ecosystem is home to approximately 85,000 animals including zebras, wildebeest, elephants, giraffes, and lions. The ecosystem is very unique, as animals migrate through community land, so she must work with local communities to make it successful and sustainable.

Foley grew up like any kid in Minnesota and ended up living and working in Tanzania for over 25 years studying elephants and conserving wildlife. She was lucky to find her passion early and pursue a degree that enabled her to have an interesting career.

Scientist Spotlight Questions

Reflection Questions

1. What type of work does the scientist you read about do?
2. What background does your scientist have to do their job?
3. How do you think this research relates to people living in cities like Chicago?
4. What is hard about this type of work?
5. How does this scientist relate to what you are learning about in school?

Guiding Questions for Group Discussion

1. What education did your scientist have and how is it different or similar to that of other scientists?
2. How are these scientists working in different ways to reach the same goal of conserving wildlife?
3. What makes this type of work hard? How would you overcome similar challenges?
4. How does conserving animals in the wild affect people who live in cities or far from wildlife?
5. How does the information you read about relate to things you are learning?