

Wildlife Veterinarian: Protecting Animals

NGSS Standard: 5-PS3-1



Adventure Description:

In this adventure, students will think like a wildlife veterinarian and create a device that will track foods that endangered animals eat.



Activity

Step One: Background Information on Wildlife Veterinarians and Endangered Animals (5-10 minutes)

- Show [Video: Protecting Animals](#).
- Explain to students that some wildlife veterinarians are responsible for making sure that animals in the wild are healthy. Have students brainstorm ways that wildlife veterinarians could study animals to determine if they are healthy or sick. One way to ensure that animals are healthy is to study their nutrition. Wildlife veterinarians want to make sure that animals are getting the correct nutrition so they can grow and develop.
- Tell students that wildlife veterinarians make sure that animals are getting the correct nutrition by creating a ration for specific animals. A ration is a mixture of ingredients that is fed to an animal. The pet food you might feed to your dog or cat is one example of a ration. Rations are created for lots of different animals, because every animal has different needs and requirements. For example, a cow might eat a ration with corn, cottonseed hulls, and molasses.
- Explain to students that every ingredient that is used in a ration contains energy, and all the food ingredients get this energy from the sun. Show [Handout: Energy from the Sun](#). Plants that we eat as food get their energy directly from the sun, but animals that we eat as food get their energy from the plants that they ate, which got their energy from the sun. All food gets its energy from the sun, either directly (plants) or indirectly (animals).
- Explain to students that they will think like a wildlife veterinarian and design a device that can be used to mix ingredients together to create a ration for a specific animal. Mixing ingredients together is important because this is how wildlife veterinarians want to make sure that each scoop that they take out of the ration is the exact same. They don't want rations with large spots of one ingredient!

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Step Two: Activity Set Up (10-15 minutes)

- Explain to students that they will design a device that will mix together a new ration for an animal at the Stripes and Spots Wildlife Refuge.
- Provide students with [Handout: Creating a Device to Mix Rations](#). Walk through the steps together as a class.
- Divide students into pairs or small groups.
- Provide groups with the following materials:
 - Assortment of recycled materials (cardboard pieces, egg cartons, plastic bottles)
 - Tape and scissors
 - Yarn
 - Selected food ingredients off of the handout

Step Three: Creating a Ration (5 minutes)

- Have groups complete the first step, creating a ration.
- Students will choose one item off of each section (Protein, fat, and supplement) to use in their ration.
- While students are working, ask them the following questions:
 - Why did you choose these ingredients?
 - Is there anything else you wish you could add? Why?

Step Four: Create a Mixing Device Prototype (25+ minutes)

- Explain to students that they will now create a mixing device that can mix all of their ingredients together to create the ration for their animals.
- Explain to students that while mixing enough food for one animal by hand might not be a big deal, many wildlife refuges need to mix rations for a whole herd of animals at the same time. When they need to make a lot of animal food, they often use large mixing devices. These mixing devices can make enough food for 100 animals at a time!
- Students are working to create a prototype of a larger mixing device that a wildlife refuge can use to create their new ration.

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- While students are working, ask them the following questions:
 - How will the ingredients you chose get into the mixing bowl?
 - How does your mixing device work?
 - How many people would be needed to operate your device?

Step Five: Discussion (5-10 minutes)

- Have students showcase their devices. Make sure they explain how their device will work.
- Have a concluding discussion about how the energy in animals' food starts out as energy from the sun. Remind students that all the food that animals eat was originally energy from sunlight.

Materials List

Provided online:

- Video: Protecting Animals
- Handout: Energy from the Sun
- Handout: Creating a Device to Mix Rations

Not provided (each pair of students needs):

- Assortment of recycled materials (cardboard pieces, egg cartons, plastic bottles)
- Tape and scissors
- Yarn
- Food Ingredients

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