

Dear Educator:

Thank you for signing up for *Winter Warriors*, a 50-minute program designed to help students explore how animals adapt to seasonal changes in weather.

*Winter Warriors* will answer the following Essential and Guiding questions:

- How are animals affected by seasonal changes in weather?
  - What are some ways animals adapt to winter weather?
  - How are animals like the pika impacted by seasonal temperatures that are hotter or colder than expected?
  - How can you reduce the impact people have on animals like the pika?

The Oregon Zoo hopes that as a result of this program, students will be able to:

- Define an adaptation as a physical or behavior trait that helps an animal survive in its environment.
- Describe how animals adapt to seasonal changes in weather.
- Explain what happens to animals when seasonal temperatures are hotter or colder than normal.
- Describe how people can reduce their impact on the natural world.

The program is correlated to the following academic standards:

**Next Generation Science Standards:**

1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

**Oregon Social Science Standards:**

1.11. Explain how seasonal changes influence activities in school and community.

***In an effort to prepare students for their Zoo School program, please consider the following activities:***

1. Explore weather and adaptation-related topics through one or more of these stories:

***How Do Animals Adapt?*** Bobbie Kalman. Crabtree (2000). This book examines the ever-changing world of animal adaptations. It explains why animals need to adapt; how animals use camouflage and mimicry to protect themselves; and how wild animals have adapted to habitat loss and learned to live in cities.

***Animals in Winter.*** Henrietta Bancroft. HarperTrophy (1997). Brightly colored paintings bring the text to life through the realistic portrayal of animals, birds, and butterflies in their natural habitats. Readers learn about the variety of responses animals have to the coming of winter.

***Weather series: A Cloudy Day, A Rainy Day, A Snowy Day, A Sunny Day, A Windy Day.*** Robin Nelson. Lerner Classroom. Focusing on five different kinds of weather, this engaging series show emergent readers the basics of weather using short, simple, repetitive sentences.

***Weather Words and What They Mean.*** Gail Gibbons. Scholastic (1990). This book offers simple explanations and colorful illustrations that teach children key words involved in weather forecasting.

2. Help students develop an understanding of weather phenomena, identify weather patterns, and compare and contrast weather around the world through a series of activities.

*Beyond Penguins and Polar Bears* (Science NetLinks )

<http://beyondpenguins.ehe.osu.edu/issue/climate-change-and-the-polar-regions/lessons-and-activities-to-build-the-foundations-for-climate-literacy>

***Continue the learning after we leave your classroom with the following enrichment activities:***

1. Dive deeper into the world of hibernation through a series of interactive activities.

*Scholastic*

<http://www.scholastic.com/teachers/lesson-plan/time-sleep>

2. Kids can help stop the warming of the Earth by recycling. Keeping with the winter theme, this is a fantastic way for kids to recycle their own items, and in turn, help someone in need.

*One Warm Coat*

<http://www.onewarmcoat.org/>

3. Hold a garbage pickup at your school. With garbage bags and gloves, you can really collect a lot. After you collect everything, try to recycle as much as you can instead of putting it straight into the garbage. This is a good way to have kids take pride in their surroundings and really notice all the little things around the area.