

Winter Decision Tree

Outdoor Activity

Curriculum: Science, Literacy



Introduction:

This activity provides teachers with a resource for exploring the many ways plants and animals adapt to winter. It can be done indoors or outdoors and all decision tree 'titles' have been provided in this lesson. There is also a short 3.5 minute video that accompanies this resource. In the video you will see how the Decision Tree is laid out and how each stage of the decision tree can be explained in the field.

Materials:

- Winter Decision Tree Appendix ([attached here](#)) which includes all the titles for laying out the decision tree.
- Photos or lists of animals that can be placed or added to the decision tree. These photos are not provided (we recommend printing random animal images from google).
- Decision Tree Video.

Instructions:

- Watch this 3.5 minute [video](#) which describes how to use the decision tree with your students. It's meant for teachers so you can replicate the decision tree titles that are included for you, however, you could also play it for students if desired.
- Gather the students outdoors or indoors with enough space for you to lay out the decision tree in a dichotomous key fashion.

- Go through all the headings (similar to how it's outline in the attached video) as two options for winter survival at each level.
- Print photos of various animals and hand out one to each of your students. Have them work through where their animal falls on the decision tree.

Discussion:

The Decision Tree acts like a dichotomous key where it provides two possible 'response' choices for each adaptation technique. All animals will fall somewhere on the flow chart. The responses indicate how the animal best adapts to the 5 factors of winter (Snow, Cold, Radiation, Energy, Wind). Some animals will be completely absent from these factors, meaning they do not live in an area where a response is required, the remaining animals have some sort of physiological response to the factors. Students find this way of looking at animals adaptations interesting and it will elicit interesting questions that could lead to inquiry-based learning.

Learning Extension – Animal Research

Introduction:

Consider extending the learning by conducting individual research projects on animals and their winter adaptations.

Instructions:

Research project ideas may include:

- How do animals know when to migrate?
- What is the science behind hibernation?
- What are the benefits and challenges of being active in the subnivean world?
- Those animals that are above nivean, what are some of their adaptations for dealing with snow depth, loss of heat, wind chill, keeping energy levels up by finding enough food, etc.?
- Have students compare how they as humans adapt to the snow factor. They obviously live above nivean but what do they do to manage the cold, snow, heat loss, energy stores, and wind chill.