Rainfall in the Forest

Objectives: The students will investigate patterns of rainfall and temperature in the Black Hills. They will relate this information to the concept that the cycles in an ecosystem affect vegetative habitat. The vegetative habitat in turn affects the animals living there. The students will infer that all parts of an ecosystem are connected.

Background: Using the provided maps students will see evidence that the amount of rainfall, average temperature, and elevation all play important roles in the type of vegetation that will grow in an area. For instance, the difference between a forest and a grassland may be the few more inches of rain that the forest receives versus what the grassland gets.

Procedure: Have the students divide into small groups to study the elevation and rainfall maps of the Black Hills region. Using an overhead projector, project the vegetative map of the Black Hills. Ask the groups to study the maps and describe the different areas of the Black Hills. Have the students describe the similarities and differences of rainfall and elevation of the areas. Using the vegetative maps, have them produce ideas as to why there might be a prairie instead a forest or meadow instead of thick pine growth. Have them look at drainages and what vegetation grows there. Why do these plant prefer this area? What animals might live there? What affect does the rain seem to have? The elevation? The temperature? What about south facing slopes? Where does the water come from? Why are all of these factors important? How do these factors affect what types of animals reside in these areas? Could a prairie dog live in the center of the Black Hills near Harney Peak? Why or why not?

Extension: If your students are interested in exploring more about how maps can show the relationships of environments and animal life check out the website www.nationalatlas.gov. There is a wealth of interesting information about environmental and agricultural topics.