

A Sense of Wonder



C. Clark/ NOAA Photo Library/NSSL Collection

Multiple cloud-to-ground and cloud-to-cloud lightning strokes during a night-time storm in Norman, Oklahoma.



STORM WATCHING . . . IN YOUR MIND

When lightning flashes and thunder roars, many children will scurry towards an adult for comfort or hide under the bedsheets. But sometimes that same storm can be used as a creative learning experience. And if there are no storms brewing, a mental exercise called a simulated field trip can be a great way to use the time around the campfire to conjure one up.

The purpose of this exercise is for children to learn that humans and wildlife share environments and experience some of the same natu-

ral phenomena. During a storm, for example, most people, pets and wildlife need to seek shelter.

According to brain researchers and learning theorists, the simulated field trip technique provides ways of processing information that facilitate long-term memory and comprehension of concepts. As a facilitator using this technique, you read or describe in your own words a series of pictures for the children, with their eyes closed, to see in their minds. Leave time between the phrasing of your words for the students to visualize the images you

are suggesting.

1. Start the process by stimulating their imagination.

"Try to picture in your mind the things you will hear me describe. I won't put in all the details, so you must try to see and feel as clearly as you can the things that I describe. Before we begin, I want you to decide what you will be during this activity. You may either be yourself or an animal. If you are an animal, you may either be a wild animal, a pet or a farm animal. You don't have to do anything special if you choose to be an animal. It is just that you will be

picturing things in your mind from the point of view of the animal you pick. Any questions? Okay, let's see by a show of hands how many people and how many animals we will have for this activity. How many of you are going to be farm animals? Pets? Wild animals? Yourselves?"

2. Ask the children to sit or lay down in a comfortable position and have them close their eyes. Ask them to picture in their mind what you are saying...

"It is a late summer's night. There is a coolness in the air... You hear the sounds of summer... Somehow, you can feel some changes coming in the weather. In the distance, the dark sky is broken by bright flashes of lightning... The light is far away... After a long wait, a rolling rumble is heard... The lightning gets closer... The rumbles are loud... Suddenly, the lightning flashes and lights up the whole sky... You need to find shelter, to find a safe place."

"The brilliant flashes of lightning pop and crackle all around you. The noise of thunder is crashing so that the earth seems to shake... There are no longer times of quiet between the rumbles of thunder and flashes of lightning... It becomes still... You notice scents in the air, things you can smell and feel... You begin to hear a new sound... You are not sure what it is... You again have to find shelter, if you had come out thinking the storm was gone... You need to find a place to stay dry... Suddenly, the rain is pouring down with a loud, rich sound... It rains, and rains... and rains... And then stillness... The storm has passed."

Wait a few seconds and then have the children open their eyes.

3. Now it's time to find out

what the children saw and felt during the simulated field trip. Find out what shelter they found, and where, and what happened to them throughout the storm.

4. After the children have shared their descriptions, turn the discussion to the idea that many animals—including people, pets and wildlife—share a common environment.

Whether we live in the cities, in the country or on a mountain top, people are not the only forms of life that live in those environments. Even

if we don't see many animals where we live, they are there in some form, from the ant on the sidewalk to the spider in the garden. It is useful to remember that we are not the only inhabitants of our environment. Events like summer storms, a strong wind and a light or heavy snowfall can all serve as special reminders.

Had the children been outside during this storm, every animal would have experienced some of the same things, although not in exactly the same ways. Any animals who were out that night likely had to find some kind of protection. Remind the children—next time they see the lightning, hear the thunder and feel the rain—to wonder where the birds are, the spiders, the cats and dogs, the fox and the bear. Where are the other animals who might be feeling this storm?

5. As a follow-up, children can draw pictures of what they imagined or pantomime the actions the animals took during the storm.

The preceding activity was adapted from Project WILD, an interdisciplinary, supplementary conservation and environmental education program for K-12 educators. For more information, contact 304-558-2771.



EVERYTHING YOU WANTED TO KNOW ABOUT LIGHTNING (BUT WERE AFRAID TO ASK)

WHAT CAUSES LIGHTNING?

Lightning originates around 15,000 to 24,000 feet above sea level when raindrops are carried upward until some of them convert to ice. A charge is created in this mixed water and ice region and moves downward, completing the circuit when it encounters something on the ground that is a good connection. It then returns back up creating an even brighter light.

WHAT CAUSES THUNDER?

Thunder is caused by the return stroke mentioned above. The bright light of the lightning flash represents a great deal of energy which heats the air to more than 50,000 degrees F in only a few millionths of a second! All this heat needs to expand, creating very high pressure. This pressure causes a disturbance that moves in all directions away from the stroke. The result is a huge sound wave, or thunder.

WHERE IS THE MOST LIGHTNING?

The highest frequency of cloud-to-ground lightning is in Florida between Tampa and Orlando, where there is just the right mix of high moisture in the atmosphere and high surface temperatures. Amazingly, the longest lightning bolt researchers have recorded was 118 miles long in the Dallas-Ft. Worth area in Texas!

Information from the National Oceanic and Atmospheric Administration's National Severe Storms Laboratory, www.nssl.noaa.gov. Check out their web site!