

## Walking the Guide

**The first thing you need to do is administer the pre-assessment.**

**Then begin the 'LIGHTS OUT!' experiment. The results will take at least four or five days.** Follow the directions. Be sure and have the students' journal their predictions.

To teach about the parts of a tree, start by asking the students to name the parts of a tree to get them thinking about trees. We assume they know roots, trunk, branches etc. Then lead them into the world under the bark.

For Activity 1, work with the students on filling out the worksheets, 'Parts of a Tree' and 'Functions of the Tree Parts.' This will give the students a little bit of background for the Project Learning Tree (PLT) activity. Next is the PLT 'Tree Factory' activity. This activity gets a bit noisy. There is a lot of laughing, animated sounds, etc. Find an appropriate place for this activity. I suggest you read steps 3 through 11 and think carefully about which student can best play which role. As each layer of tree is added have the 'tree' act out their parts. For example, in step five you will have one student as the heartwood saying 'I support,' two or three sapwoods chanting 'gurgle slurp' and one student as the taproot making 'sucking' noises. The student who is the heartwood is going to playing a continuous role (standing still and leading the other students) whereas the students who are the bark are going to have a bit of a wait to perform their part.

Activity 2 is the 'Lights Out' photosynthesis exercise. Photosynthesis was added to this unit as a request from teachers like you. A hot topic related to photosynthesis is carbon and carbon reservoirs. We can increase carbon sequestration now by working with some experts: "They're called trees, and they have almost 350 million years' experience in sequestering carbon. The engineering feat is called photosynthesis." (2011 New York State Department of Environmental Conservation). There is a brief amount of background information regarding carbon sequestration in the Teachers Guide.

The final activity is Tree Density, there are three parts to this exercise. Two of which are reading; one is about wildland fire (Living with Fire) and the other a brush fire from my childhood. The final part of Activity 3, is the 'Trees Need Space Too' activity about nutrition of a forest.