# LESSON PLAN
## Redwood Transpiration Experiment

**Mission Statement**
*Caritas Creek's mission is: to help young people discover the connection between all living things; to build bridges between diverse socio-economic and ethnic groups; and to foster in youth a deeper connection to the natural environment, to self, to the spirit of love, and to community.*

**How to use this Lesson Plan**
      **Grade -** 5th - 8th
      **Learning Cycle -** exploration
      **Themes -** community/change
      **Time -** 30 minutes total - 15 at the beginning of the hike and 15 at the end

**Objectives**
      Introduce the concept of transpiration and talk about the role plants play in the water cycle

**Materials**
      Plastic bags and rubber bands
      Data sheets or journals (optional)

**Procedure**
1. Tone set – How do trees get food?  How do they get water?  Once they get water from the soil, where does it go?  Are plants a part of the water cycle?
2. Exploration – Rubber band a small plastic bag over part of a tree (top of small tree or end of a branch).  Do this to a couple different species of trees (redwood, Douglas fir, bay laurel etc.) and try to pick both coniferous and deciduous trees in order to compare.  Allow the students some time to form hypotheses about what will happen over the next several hours.  Will all the trees have the same results?  After several hours, return to check the plastic bags.
3. Debrief -Which bag had the most water in it?  Why do you think that could be?  What might have affected this experiment? Was one tree more in the sun than another?  Are there other possibilities?  Why is there water in the bags at all?  Where did it come from?  Is it humid outside today?  Do you think the amount of water in the bag depends on how humid it is outside?  Do you think wind affects it?  Do you think recent amount of rain affects it?  Do different species of trees transpire at a different rate?

**Cabin Leader Role**
      They can help students rubber band bags onto the trees you have chosen.

**Variations**

**Extensions**
      Good activity to tie into watershed activities and other water cycle games.