LESSON GOALS
The primary goal of this study is to help children become familiar with the names and shapes of leaves of common trees in our school yard. Children will actively explore their environment. The children will observe, compare, measure, predict, hypothesize and infer. The children will have opportunities to explore the world and materials around them, and share their findings with others through discussions, charts, graphs, etc. Children will participate in a variety of science experiences utilizing age appropriate scientific equipment and collections of materials.

This study is interesting to Pre-K children, because four-year-olds love all activities evolving around nature and the outdoors. The aim of environmental education for young children is to develop a sense of wonder and respect for the natural world. They cannot do this without having positive real-life experiences with nature. This is what I hope to accomplish during our year and studies of our school yard.

MATERIALS
There will be ten trees to be identified seasonally, five in the fall and five in the spring. The identified trees will be tagged previous to this time of the activity with colored plastic ribbon. Five extra trees will also be discussed and tagged to add to the diversity and numbers of trees looked at. The children will be told up front that we may look at some trees that we don’t match their leaves with.

Two Tree/Leaf Keys will be provided for the teacher and the assistant teacher. These will be prepared ahead of time and laminated for kid friendly use. These keys will consist of the ten chosen trees with photocopies made of the leaf with stem for matching identification. Each teacher will take a group of ten children for this activity.

On the day that we gather leaves for matching, the children will be given a gallon size Ziploc bag. These will be distinguished with colored leaf stickers on the outside of the bag to show which group they were in.

Two cameras will also be used during this activity to record the children and their experiences with the trees and leaf gathering.

POSSIBLE STUDENT-DRIVEN QUESTIONS
- What kind of trees are we looking for?
- What season is it now?
- What happens to some trees in this season?
- Do all trees lose their leaves in the fall?
- What else does the tree have besides leaves?
- What makes the tree stand up straight?
- Is this tree dead or asleep?
- What do new leaves look like?
- What is eating on this leaf?
When you are looking at pre-trip predictions of four-year-olds in early fall, you are probably not going to get the names of trees. They may be able to name some parts of the trees, though, such as leaves, limbs, bark and roots. Some children will already understand some of what happens to trees in the fall, but not all. They will not be able to draw leaf shape predictions in the fall, but perhaps in the spring.

**PROCEDURE**

Sampling Sites:
- Water Oak - in the playground area
- Loblolly Pine - on the nature trail
- Pecan - at the back of the field by the walking track
- Winged Elm - on the nature trail
- Sugar Maple - on the nature trail
- Dogwood - on the nature trail
- Redbud - at the beginning of the trail
- Mimosa - behind the meeting area
- Black Locust - on the trail

There will be some overlapping of trees used in the fall and the spring. For example, the dogwood can be observed in the fall with red fruit and in the spring with flowers. Other trees will have seedpods in the fall and flowers in the spring.

I tried to choose trees that were easily accessible to small, four year olds and in a variety of locations. The idea is for them to do as much of the investigation on their own, allowing them to lead the interest and project with guidance from the teachers.

**Day 1: Field Investigations**

Monday, after circle time and a bathroom break, we will assemble back on the circle rug for the story, *The Giving Tree*. After a short discussion of the story, I will explain to them that we are about to go on a nature hike through the playground and the woods on our nature trail. We will be observing lots of things about these areas, but mostly we want to observe the trees on the playground and on the nature trail. All during the walk we will be asking open-ended questions that will hopefully generate the children to ask questions of their own about trees and to share their prior knowledge of trees at this time.

After our hike in the woods, we will return to the playground area where we will provide large-peeled crayons in a variety of colors and white Xerox paper and show the children how to make rubbings on tree bark. As we are showing them how to do this, we will also be creating conversation about bark, different kinds of bark and what they think its purpose is.

**Day 2:**

Our second hike to the woods will begin with a discussion of the trees we saw yesterday. I will give brief instructions now that we are going back into the woods to look for certain trees that will be marked for...
them to see. We will talk about these trees, describe them in words, and take sample leaves from these trees, which the children will have their sample bag to put their leaves in to carry back to the classroom. When we return to the classroom, we will sit in our two groups and I will show them a page from our leaf key book and ask them to show me one in their bag that looks like that leaf. We will discuss how the leaf looks, smells, feels, and identify the leaf. Each leaf of our investigation for the fall, we will discuss like this. I will also bring up our predictions that the children made about trees and leaves before we made our first walk in the woods. We will note whether their ideas have changed any.

After this time and we’ve collected our fall leaves, I will show them how we can press our leaves to preserve them. We will spend the rest of our morning time pressing each of their fall samples for future use.

Day 3:
We will take a third walk in the woods, reexamining trees and leaves and see how many they can identify at this point. They will also have again their gallon Ziploc bag for collecting leaves of their choice. They will be guided to choosing some of the chosen trees but also other leaves of different sizes, colors and shapes for our art project. The children will take their leaf collection back into the classroom and be guided into making animals out of their leaves that they collected. After these are completed, they are free to take home their bag with any remaining leaves in them.

Other tree related projects to be done are:
- Leaves of Steel: using one cup-a-meter to show the children how it’s done
- Fall Wreaths: using a paper plate, cut and color. Then the children glue on items that we gathered on a hike again on the trail and outside.
- Fall Leaves: make patterns either by color or leaf type.
- Tissue Paper Leaves: contact paper in the shape of a leaf and fill in with different colors of tissue paper

RESOURCES
- [www.sciencemadesimple.com](http://www.sciencemadesimple.com)
- [www.educationworld.com](http://www.educationworld.com)

BUDGET
- 20+ sheets of Xerox paper to create your Leaf Keys on
- Lamination for the keys
- 20 1 gallon Ziploc bags for each of the children

TEACHER NOTES
The trees that will be identified on the Palmer Stone Playground and nature trail are:
- Fall:
  - Water Oak
  - Loblolly Pine
  - Pecan
  - Winged Elm
  - Sugar Maple
  - Dogwood
  - Redbud
Spring:
In the spring again you would make the trips out on the playground and on the nature trail. Again you would walk and talk first. Then you would mark the trees that you want the children to learn about and gather leaves from. Note the differences that they see from the same tree from one season to the next.