**Elementary Leave Your Leaves Lesson 2**

*Elementary Lessons designed and created by Katie Henson*

**Comparing Leaves at Different Life Stages**

**Introduction:** Not only can leaves look very different between different trees, but they can also look very different within the same tree. This is especially true for leaves at different life stages in fall. Leaves that are still attached to the tree look very different compared to leaves that have fallen to the ground. Once leaves reach the ground, they dry out and are broken down by insects and fungi. By comparing leaves that were collected from the tree to those from the ground, students can see changes that occur once leaves start or continue the process of dying and decaying.

**Procedure:** Take students to a nearby tree whose leaves have started to fall, but have not yet fallen completely. Explain that they will be comparing the leaves that are still attached to the tree to those that have already fallen to the ground. Have half the students pick leaves directly from the tree (no more than 15 leaves total), and have the other half gather leaves that have fallen to the ground. Students gathering leaves from the ground should make sure that they are gathering fallen leaves from the focal tree and not leaves that may have fallen from nearby trees. Have two paper bags prepared beforehand, one labeled “from tree” and one labeled “from ground”. The students who picked leaves from the tree will place them in the “from tree” bag, and the students who gathered leaves from the ground will place them in the “from ground” bag. Take the bags back to the classroom and explain that these bags will be used to observe the dying and decaying process of leaves. This can optionally be paired with a lesson about leaf life cycles, photosynthesis, trees, and/or decomposition. Have students make predictions about how the leaves will change over time, and if they expect the change to be the same or different between the two bags. Over the course of one month (any longer and the leaves will start to smell), have students track the changes to the leaves in both bags. Either in a journal or sheet of paper to turn in each time, have them note things like changes in color, texture, and leaf shape. These comparisons can happen every day at most or once a week at least, with once every 2-3 days being ideal.

Questions before activity begins:

1. How do leaves help a tree before they fall off? After they fall, do they stop helping the tree, or do they help in a different way?
2. Why are leaves green early on in life, then change color toward the end of their lives?
3. Why might green leaves be beneficial in the summer, but no longer beneficial in the winter?
4. Trees must spend energy to grow leaves and keep them alive. How do trees get this energy back in spring/summer, and why do they stop spending this energy in fall/winter?

Questions after activity ends:

1. Did the two bags of leaves look different from each other on day 1? If yes, how so?
2. What was happening to the leaves while they were in bags, and why did it make their appearance change?
3. Did one bag of leaves change faster than the other? If so, why?
4. When is a leaf officially dead? Can it be dead and still attached to a tree?
5. Using words you would normally use to describe people (baby, child, adult, etc), describe the life stages of leaves throughout the year.
6. Why do leaves take time to die and fall off? Why do we not see green leafy trees one day and bare trees the next? What role does the environment play in this process?