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Falling Leaves

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Title: Falling Leaves



In the course of a few weeks from late October to early November, I noticed just how many leaves one little tree lost in that time. A decently long path between Biddeford Middle School and Biddeford Intermediate School is where I made my observations with my classmates. About $\frac{3}{4}$ of the way down the path is a large tree bending over. Right next to that is a small maple tree, you can't really tell in the winter because it's missing its leaves. That tree, though very small, made me wonder a lot.

When we first went out on October 20th, I noticed that the tree had only about $\frac{1}{2}$ of its leaves on its fragile branches. It was the time of year when it just started getting colder, so a tree should have lost a few leaves and started to lose more. 9 days later, I noticed that the same tree had maybe 15 leaves left. It was quite a drop in the number of leaves still on the branches in just 9 days. It was getting a bit chillier by day and other trees were dropping leaves, but not as many! After another week, the poor tree had nothing but 1 leaf that was barely attached to it. The tree also looked very worn-down and half-dead, I have seen quite a few trees in winter, but none have looked as weak as that one! I've known for a while that trees take the chlorophyll out of their leaves to hibernate, but this one looked more deadend than the rest. According to Britannia and other sites, trees drop their leaves as a form of self-protection against harsh winter weather. When the temperature drops between 40 and 50 degrees Fahrenheit, hormones actually begin a process that involves stopping chlorophyll production and cuts the leaf from the tree. According to an article by hunker.com, multiple different things can affect when a tree loses its leaves, ranging from stress on its environment to chemical signals.

My question is "What factors make leaves fall off trees?" To figure that out, next fall, I'm hoping to go back to that tree and observe it again as well as other things like temperature and weather. Once it's winter, I'll compare my data of the two years and see if temperature and

weather are some of the factors. If I don't end up seeing the tree again, I do not plan on continuing my investigation on it.

Sites:

<https://www.britannica.com/story/why-do-leaves-fall-in-autumn>

<https://www.hunker.com/13428838/why-do-some-trees-lose-their-leaves-faster-than-others>

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<https://www.docsity.com/en/answers/trees-when-time-shed-their-leaves-prolonged-temperature-drop/154162/#:~:text=In%20fall%2C%20with%20less%20sunlight,less%20the%20other%20nonphotosynthetic%20parts.>