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Leaf Colors in the Fall

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Mrs. Jones

Science 7B

November 5, 2021

Leave Colors in the Fall?

On October 28th, 2021 at 11:30am, on a trip to the summit of Pawtuckaway State Park's south mountain, I found a roundish yellow leaf on the ground. It was cold but sunny out. The leaf color was different from some of the other ones I'd seen. The leaf was a yellowish brown color with dark brown veins. After doing more research I found that the leaf was from a beach tree. Another leaf I observed was red with more points. This one was from a maple tree. The different colored leaves were interesting because while many trees' leaves change color and fall off in the fall, I didn't know why the colors they changed were different. I wondered why two leaves from trees that live in the same place with the same weather turned different colors?

There are four different pigments in leaves:

- Xanthophylls turns leaves yellow,
- Carotenoids turns leaves orange,
- Anthocyanins turn leaves red, and
- Chlorophyll turns leaves green.



Chlorophyll is the most important chemical and helps leaves make food from the sun so there is plenty of it in the spring and summer. In the fall trees stop making their Chlorophyll before they fall off so they don't lose as much of it. During the time when there isn't much Chlorophyll the three other chemicals come out. The amounts of each chemical in a leaf will determine the color they turn in the autumn before they fall off. Some tree's leaves have more of

one chemical than the others which is why some tree's leaves all turn the same color in the fall.

The beach tree's leaf must have had more Xanthophylls and so it turned yellow. The maple leaf must have had more Anthocyanins and that is why it turned red. All trees have a certain amount of each chemical and so when the chloroplast is removed they turn different colors.

Trees turn the colors they do because of chemicals and the amounts present at a certain time. Learning a lot about the chemicals and pigments in leaves has left me with one big question: do evergreen tree's leaves have different chemicals in them too or do they just not stop making their Chlorophyll like other trees. To answer this question I could measure the amount of the chemicals in evergreen leaves. Then compare it to the amount in other leaves to see why evergreen leaves stay green.

Work cited page:

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