Measuring Transpiration of Differing Leaves

Scientific Inquiry: Will different leaves transpire at a different rate?

Experiment Setup:

1. Find two ziploc bags, it doesn't matter what size and take them outside. If you have two rubber bands, gather those as well.

2. When outside, find two species of trees you wish to be included in your experiment. You may wish to make one tree a deciduous tree and one an evergreen or two different species of deciduous trees or two different species of evergreen tree. As long as the leaves are from two different species of tree, whatever choice of leaf you make will be fine for the experiment. **(NOTE)** If you do not have access to a tree in your yard, take a few leaves (3-5 individual leaves) off of a tree and place them in the ziploc bags. Close the bag tightly around these leaves and leave them in a spot that is near your house where the sun will be on both bags an equal amount of time.

3. Once your choice has been made, take the ziploc bag and, while the leaves are still on the tree branch of one of your species, place the bag over the leaves. If you can close your bag without using a rubber band, go for it. If not, place the rubber band around the bag towards the opening and wrap it around, sealing in the leaves. Make sure you close the bag as tightly as you can without breaking the bag or rubber band.

4. Do the same to the other species of tree/leaves you have chosen. Decide which leaf is "Leaf Type 1" and "Leaf Type 2". You can name your leaves and use that name in your chart.

5. Now leave the bags alone and start to fill in the chart below. Your "start time" is the time of the day you started your experiment.

6. Every hour, for a total of 4 hours, check your leaves and continue to fill in the chart below. List as many observations as you can!

7. At the end of 4 hours, collect your materials, while keeping the leaves on the tree (or if you picked leaves, drop them back on the ground). Try to keep as much of the liquid in your bag as possible.

Resources for Remote Learning
Transpiration Experiment

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Data Table:

	Leaf Type 1/Name:	Leaf Type 2/Name:
Start Time:		
Hour (Hr.) 1 Time:		
Hr. 1 Observations:		
Hour (Hr.) 2 Time		
Hr. 2 Observations:		
Hour (Hr.) 3 Time:		
Hr. 3 Observations:		
Hour (Hr.) 4 Time:		
Hr. 4 Observations:		

Matter (North Carolina)

Analysis Questions:

1. Did transpiration occur? What is your evidence?

2. At which hour was Leaf Type 1 transpiring the most? Leaf Type 2?

3. Which leaf transpired the most? If one transpired more than the other, why do you think that happend?

4. What changes could you make to your experiment in order to get different results?

5. How much liquid were you able to collect in the bag? Give your answer in ounces.

6. Of that total volume of liquid, what percentage of that total amount do you think was collected in hour 1?

7.. Explain how the sun impacts the rate of transpiration with both of these leaves.