



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> <b>Jennie D. Kim</b>	<b>Project Number</b> <b>J1719</b>
<b>Project Title</b> <b>Transpiration Is a Fact, but Is a Pattern an Act?</b>	
<b>Objectives/Goals</b> The objective of this experiment was to determine if there was a relationship between a pattern of transpiration and how long plants are in the sun. The hypothesis was that there would be a pattern in transpiration the plant will lose approximately 1 gram of water, every two hours of sunlight	
<b>Abstract</b> The experiment was possible with the materials: three identical plants, plastic sandwich bags, twisty ties, a scale, a black permanent marker, tap water, and three 8 fl. oz. cups. A few of the plastic sandwich bags and twisty ties are weighed beforehand. The weights of each are then averaged. The plants# pots are labeled 2 hours, 4 hours, and 6 hours, as well as Plant 1, Plant 2, and Plant 3. The plastic bags are put on a leaf of each plant, tightening the ends with the twisty tie. The plant is then watered, with the 8 fl. oz. cups, and put in the sun for as long as it is labeled, in the morning at 8:00 a.m. After the plants receive the scheduled amount of sunlight; it is taken to a place without direct sunlight. The bags are carefully taken off and the bag is weighed. The data is recorded; the total weight is subtracted by the weight of both the bag and twisty tie. The data is recorded.	
<b>Methods/Materials</b> The experiment was possible with the materials: three identical plants, plastic sandwich bags, twisty ties, a scale, a black permanent marker, tap water, and three 8 fl. oz. cups. A few of the plastic sandwich bags and twisty ties are weighed beforehand. The weights of each are then averaged. The plants# pots are labeled 2 hours, 4 hours, and 6 hours, as well as Plant 1, Plant 2, and Plant 3. The plastic bags are put on a leaf of each plant, tightening the ends with the twisty tie. The plant is then watered, with the 8 fl. oz. cups, and put in the sun for as long as it is labeled, in the morning at 8:00 a.m. After the plants receive the scheduled amount of sunlight; it is taken to a place without direct sunlight. The bags are carefully taken off and the bag is weighed. The data is recorded; the total weight is subtracted by the weight of both the bag and twisty tie. The data is recorded.	
<b>Results</b> After all trials were completed, the averages of the three plants concluded that there is no pattern of transpiration, and so approximately 1 gram was not lost every two hours. The averages of each plant were all not even 1 gram: which Plant 3#s average was 0.88 gram, approximately 1 gram. Plant 1 lost 0.385 gram total in average, and Plant 2 had lost 0.6 gram. By subtracting for the differences, the plants had lost approximately a little over 0.2 gram. Even during the experimenting, it was possible to realize there wouldn#t be a pattern. For example, on some days Plant 1 and 2 will have the same results, like Day 1 and 6; it was 0.35 for both plants and 0.55 for the Day 6. In plants, there is no transpiration pattern relating to its time in the sun.	
<b>Conclusions/Discussion</b> The hypothesis was not supported by the data. The hypothesis was that there will be a pattern in transpiration and every 2 hours ( 2 hours, 4 hours, and 6 hours) the plants will lose approximately 1 gram. Instead there was no pattern but varying amounts of water loss during all the time intervals. The plants had released different amounts of water loss for the majority of the trials, and it usually wasn#t even 1 gram.	
<b>Summary Statement</b> Will there be transpiration pattern every two hours, for a plant, or not?	
<b>Help Received</b> My mother bought the supplies I needed, and my grandmother let in the plants inside at their scheduled times, while I was at school.	