

## Drying by Design

### **Evaporation & Humidity** Demonstration or Student Activity

Wipe a damp sponge across the chalkboard. Watch and notice the way that the streak of water disappears. (from [http://faldo.atmos.uiuc.edu/w\\_unit/LESSONS/evaporation.html](http://faldo.atmos.uiuc.edu/w_unit/LESSONS/evaporation.html))

Ask students about how well towels dry in different locations. Why do their parents get annoyed if they leave a damp towel on their beds? Have they ever gone to dry themselves off from a shower and found that their bath towel is still damp from the day before? Under what kind of conditions did the towel not dry out completely?

#### **Demonstration:**

Dampen two or three identical pieces of cloth, and then weigh each one. Put them in different locations to demonstrate how temperature and air flow affect rate of evaporation. Maybe one could be close to a light or in a sunny window, one in a heap on the floor (like they sometimes do with their bath towels), and one either in front of a fan or given to a student to gently wave around. Check the weight of each piece of cloth after a given amount of time to see which conditions caused the greatest amount of water to evaporate.

#### **Student Activity:**

Alternately, this could be done in the form of a challenge. Use pieces of cloth that are the same size (bandanas would work well), giving one to each student or team of students. Students should dampen the cloth, weigh it, and then record the damp weight. Make sure that the cloth is only damp, so that excess water cannot be rung out. Give students a specific amount of time to dry out their piece of cloth. Objective is to dry the cloth as much as possible (to have the highest difference in weight) after the given time interval. Students can wave around their cloth or hold it near a sunny window or light. Use floodlights if possible. After a given amount of time, re-weigh the pieces of cloth. Discuss results.