

## Entropy and Rubber Bands

### Purpose

To demonstrate the concept of entropy.

### Materials

rubber bands

ring stand with clamp

meter stick

hair dryer

500 g weight

### Procedure

1. Pass out rubber bands to the students in lecture.
2. Have the students place the rubber bands on their lips and stretch the rubber bands (they should note a slight increase in temperature).
3. Suspend a rubber band on the clamp and attach the weight as shown in the figure.



3. Warm the rubber band with the hair dryer and measure the contraction.

### Additional Information

1. The contraction of the rubber band is an endothermic process. It is also spontaneous. Therefore, the contracted rubber band must be less ordered.

### Questions for the Students

1. Ask the students which is more orderly, the stretched or contracted rubber band.
2. Ask the students if the contraction of the rubber band is exothermic or endothermic.

### Reference

University of Illinois, Urbana-Champaign.