

# Dipping Bird Lab



## Procedure:

1. Gently wet the head of your dipping bird and arrange so that as it dips forward its head touches the liquid in the cup.
2. Allow the bird to cycle and observe.
3. Answer the questions below.
4. Write the conclusion paragraph.

## Questions:

1. Observe the bird and **describe** one cycle of action (just what happens, not why). *Try thinking of it as if the bird's body was not transparent.*
2. Why does the bird dip? **Explain.** *Try applying your previous Physics knowledge!*
3. What force(s) is/are responsible for dipping? (remember force is a *vector* and has direction) **Explain.**
4. How does the bird return to the upright position? (just what happens, not why) **Explain.**
5. What makes the bird return to the upright position? **Explain.** *Think about #2.*
6. Why does the bird have a fuzzy head? (*be very specific*) Would it work if the head was not fuzzy? **Explain.**
7. What would happen in the *short term* if the cup of liquid was removed? What would happen in the *long run*? **Explain.**

8. Would the relative humidity of the surrounding air affect the *rate* of dipping? If so, *how* does it affect the rate? **Explain.**
  
9. Describe *two* conditions in which the bird would fail to operate. Excluding ceasing its ability to move or breaking it. **Explain.**
  
10. *The bird is doing work*, where is the energy coming from? **Explain.**
  
11. What, if anything, would change if the liquid had a *lower evaporating temperature*? **Explain.**
  
12. What, if anything, would change if *additional heat* in the form of a lamp was applied to the body of the bird? **Explain.**

### **Conclusion:**

Pretend a new student will join our class the day after you complete this lab. **Write** a *full* description of how the bird works using appropriate Thermodynamics terms in complete sentences in a full *paragraph*.

