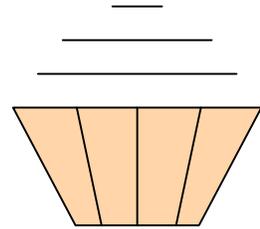


# Coffee Filters

The shape that many coffee filters have for use in home coffee makers allows them to fall very nicely with minimum amount of wavering back and forth. This stability leads to some observations and some questions to investigate.



*Observation:* When you drop a single coffee filter from a height of perhaps a meter or two, it seems to fall with a fairly steady speed. Try it.

*Observation:* When you drop two coffee filters from one hand and one from the other, the two filter group seems to fall faster than the one. Try it.

During this lab, investigate these questions:

1. Do coffee filters, singles or multiples, fall with steady speeds? Present clear evidence to support your conclusion.
2. Is there a relationship between the number of filters and how rapidly they fall? If so, what is it?

*For discussion:*

1. What are the forces involved as the coffee filter(s) fall toward the ground? What can you say about the relative sizes of those forces?
2. If you were to get coffee filters that were larger, say for restaurant use, how would you expect them to behave as compared to the home kitchen size? Try it out if possible.

## Materials

Coffee filters  
Interface  
Data collection program  
Motion Detector  
Video camera (optional)