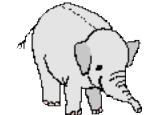
Air Resistance and Terminal Velocity

Read from Lesson 3 of the Newton's Laws chapter at The Physics Classroom:

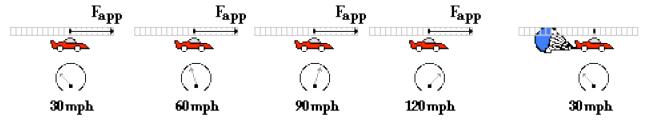
http://www.physicsclassroom.com/Class/newtlaws/u2l3e.html

MOP Connection: Newton's Laws: sublevel 11

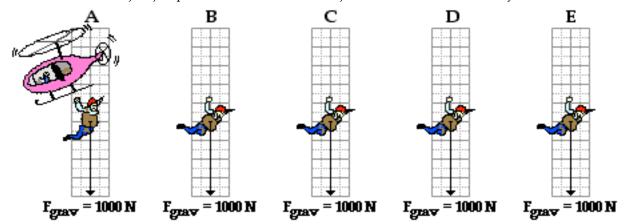
- 1. When falling under the influence of air resistance and dropped from the same height, which will fall to the ground at a faster rate?
 - a. a mouse
- b. an elephant
- c. the same



- 2. Which of the following variables will have a direct effect upon the amount of air resistance experienced by an object? (That is, for which of these quantities will an increase lead to a resulting increase in the air resistance force?)
 - a. speed
- b. air density
- c. cross-sectional area
- 3. Consider the dragster's motion below. Speedometer readings and the forward propulsion force (F_{app}) are shown. The top (or terminal) speed is 120 mph. Draw F_{air} force arrows on each diagram to illustrate how the amount of air resistance changes during the course of its motion.



4. Draw F_{air} force arrows to show how the force of air resistance changes on the falling skydiver. At **A**, the diver has just jumped; and at **E**, the diver has just reached terminal velocity.



5. Fill in the blanks in the following paragraph.

As an object moves faster and faster, the amount of air resistance ______ (increases, decreases) until a state of terminal velocity is reached. Once terminal velocity is reached, the force of air resistance is ______ (greater than, less than, equal to) the force of gravity. Hence, the object will ______ (continue to accelerate, stop its motion, stop its acceleration, move back up to its starting position).