

This 1935 commercial for Chevrolet Motors shows a race between a car and ice boat. The kinematics situation is fairly simple; one could estimate the constant speed of the boat and car and calculate their displacement. However, it is more interesting to consider the role of friction for each of the vehicles.

The ice boat is sliding on rails, so the force opposing its motion is kinetic friction. The car, on the other hand, is rolling on wheels, so static friction is opposing the motion.

Most students don't understand how something that is moving can experience static friction. Draw a figure or show a wheel; then, demonstrate how the wheel is stationary with respect to the surface.