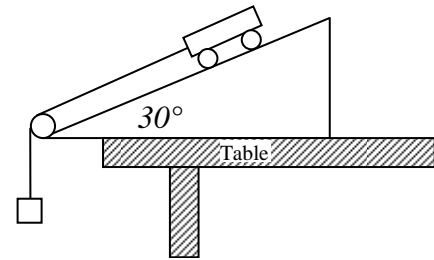


Pre-lab 8

A Hot Wheels car carrying 500 gram additional mass was launched by a spring upward from the bottom of a 30° incline. The maximum height the car approached was 15 cm above the bottom of the incline. A student decided to perform an alternative experiment. Instead of carrying the mass, the mass was pulled up through a pulley, as shown below. The student predicts that the car will reach the same spot along the incline if the spring was compressed the same amount. Is this a reasonable prediction? Explain fully.



Ignoring friction, how would the angle of the incline affect how high above the base of the incline the car will ultimately travel? In other words, suppose a Hot Wheels car approaches two inclines dragging the same amount of mass, one at 20° and one at 40° . How will the maximum height above the base compare for the two inclines? Explain your reasoning fully.