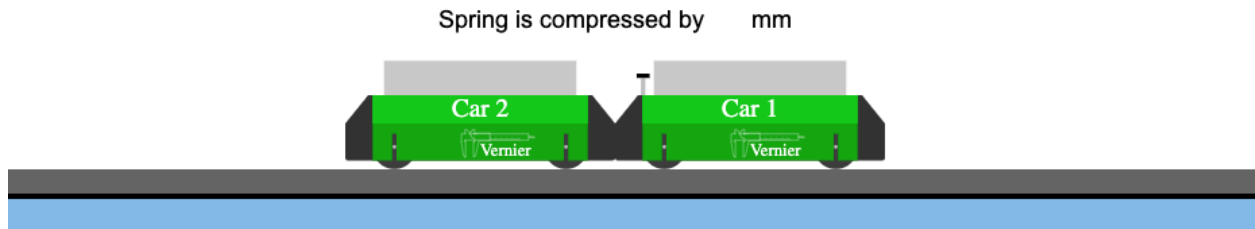


Spring Constant from Momentum Conservation

Step 1: Fill in all the information in the picture shown below for the cars before they separate.



Step 2: Fill in all the information in the picture below for the cars after they separate.



Step 3: Use conservation of momentum to find the velocity of car 2 after the cars separate. Show all your work neatly in the space below.

Step 4: Find the total kinetic energy of the system after they separate. Show your work below

Step 5: Set the kinetic energy equal to the elastic energy of the spring before separation and then use that to find the spring constant of the spring. Enter your answers into the program to see if you did all your work correctly