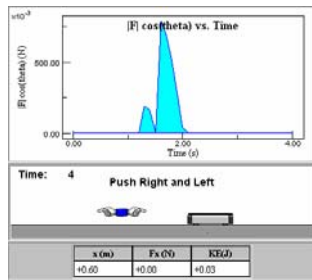


Worksheet for Exploration 7.1: Push a Cart Around



The cart in the animation interacts with the two-handed image if the image is near the left-hand or right-hand end of the cart (**position is given in meters and time is given in seconds**). Move the image from side to side and observe the resulting graph. The arrow below the cart shows the direction and strength of the force. Restart the animation if the cart goes off screen. [Restart](#).

Define the system to be just the cart and answer the following questions assuming that you are moving the cart around with the "handy" image.

- a. Is the energy of the (**CART**) system constant? If not, where is it coming from?
 - i. Push the cart to the right (gently...watch the arrow). What happens to the KE and to the speed?
 - ii. What happens when you push to the left (KE and speed)?

- b. Does the energy always decrease if the image is to the right of the cart? Does it increase if the image is to the left?
 - i. Carefully describe the conditions needed to increase the KE and to decrease the KE of the cart.