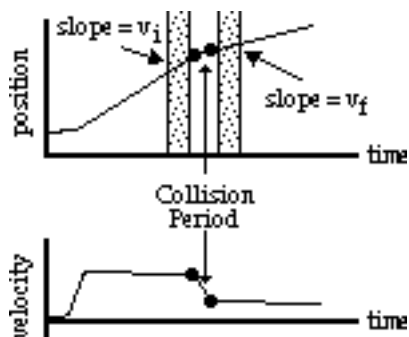


## For the Inelastic Collision Analysis Lab

(Tape the following into your Data section and complete.)

Orient the carts so that their Velcro strips are facing each other. Conduct a number of inelastic collisions on the low-friction track. Vary the mass of the *carts* using bricks ( $m_{\text{cart}} = 0.25 \text{ kg}$ ;  $m_{\text{brick}} = 0.25 \text{ kg}$ ). Use the motion detectors and the Logger Pro software to determine speeds of the moving carts. Identify the collision location by carefully observing the two graphs. Determine the speed of the carts immediately before and immediately after each collision. One way to determine the speed values is to highlight the graph during the 0.1-0.2 second prior to the collision and then to click on the **Linear Fit** button on the Button strip at the top of the page. Take care to obtain reasonable and representative speed values. **Note:** the motion detectors cannot detect objects located within 40 cm of the detector.



### Primary Data:

Trial	m <sub>1</sub> (kg)	m <sub>2</sub> (kg)	Before Collision		After Collision
			v <sub>1</sub> (m/s)	v <sub>2</sub> (m/s)	v <sub>1</sub> = v <sub>2</sub> (m/s)
1				0	
2				0	
3				0	
4				0	
5				0	

### Secondary Data:

Trial	Before Collision			After Collision			Δ Momentum	
	p <sub>1</sub> (kg•m/s)	p <sub>2</sub> (kg•m/s)	p <sub>total</sub> (kg•m/s)	p <sub>1</sub> (kg•m/s)	p <sub>2</sub> (kg•m/s)	p <sub>total</sub> (kg•m/s)	Δ p <sub>1</sub> (kg•m/s)	Δ p <sub>2</sub> (kg•m/s)
1		0						
2		0						
3		0						
4		0						
5		0						