Momentum Investigations

By Nevin and Shuling

$$F \triangle t = m \triangle V$$

Even while on a slope! (plus gravity)
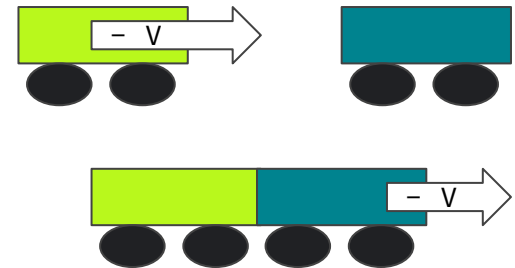
Problem 2e Inelastic Collision

— — —

Problem 2E	From Vernier	From Vernier	$\frac{1}{2}m_1v_I^2$	$\frac{1}{2}(m_1+m_2)v_F^2$	KE$_F$− KE$_I$	m_1v_I	$(m_1+m_2)v_F$	Momentum$_F$ − Momentum$_I$
Trial	v$_{initial}$ m/s^2	v$_{final}$ m/s^2	KE$_{initial}$ J	KE$_{final}$ J	ΔKE J	Initial Momentum	Final Momentum	Δ Momentum
1	−0.641	−0.319	0.061	0.030	−0.031	−0.191	−0.190	0.001
2	−0.375	−0.181	0.021	0.010	−0.011	−0.112	−0.108	0.004
3	−0.482	−0.237	0.035	0.017	−0.018	−0.144	−0.141	0.002
4	−0.532	−0.261	0.042	0.020	−0.022	−0.159	−0.156	0.003
5	−0.560	−0.273	0.047	0.022	−0.025	−0.167	−0.163	0.004
Average	−0.518	−0.2542	0.040	0.019	−0.021	−0.155	−0.152	0.003

Goal:

- Prove KE$_{final}$ is lower than KE$_{initial}$
- Prove that momentum is conserved (momentum before and after the collision are equal)

Time for cool tip!