PoPEPST

"PHocus on Physics" Energy Problem Solving Techniques

Example Problem:

You and a few of your friends are in a rollercoaster car. The total mass of the car and all the people is **1255 kg.** The height of the first hill is **72.0 m** and the height of the second hill is **58.0 m.**

1. What is the velocity of the car at Point C?

Energy Boxes

Did you Draw a Picture Yet ?				
Type of Energy	**Point A**	**Gauge**	**Point C**	**Gauge**
PE	mgh		mgh	
KE	$1/2mv^2$		$1/2mv^2$	
TE	PE + KE		PE + KE	

Roller Coaster				
Type of Energy	**Point A**	**Gauge**	**Point C**	**Gauge**
PE	mgh 903,600 J		mgh 727,900 J	
KE	$1/2mv^2$ 0 J		$1/2mv^2$	
TE	PE + KE 903,600 J		PE + KE 903,600 J	

$727{,}900 + \frac{1}{2}(1255\text{ kg})\,\mathbf{V^2} = 903{,}600\text{ J}$

V= 16.73 m/s