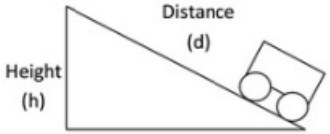
Ramp It Up!

Procedure: Measure the work done on a cart and its Ep at the top of the ramp.

$W = Fd$ $E_p = mgh$



Trial 1:
F = 3.3 N m = 1.1 kg
d = 0.26 m g =
h = 0.08 m
W = 0.858 Ep = 0.862

Trial 2:
F = 5.0 N m = 1.1 kg
d = 0.26 m g =
h = 0.12 m
W = 1.3 Ep = 1.29

Trial 3:
F = 6.2 N m = 1.1 kg
d = 0.26 m g =
h = 0.15 m
W = 1.612 Ep = 1.617

How does the work done on the cart compare to its gain in potential energy?

$W \simeq \Delta E_p$

Using all the words ***work, height, force*** and ***distance*** explain why ramps can be useful machines.

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$\Delta E = W = F \times d$

If you ↑ distance, you ↓ force. That's why ramps, screws etc make work easier!