



PHYSICS

WORK, POWER AND ENERGY

WORK**Definition:**

Work is accomplished when a force moves an object a certain distance.

Ex:***Non-Examples:***

Work can be determined by:

$$W = F \times d$$

W =

F =

d =

Ex: How much work is done by a person pushing a car with a force of 800N for a distance of 200m?



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POWER**Definition:**

To determine Power:

$$P = \frac{W}{t}$$

P

W

t =

Ex: What is the power of a bulldozer that does 55 000J of work in 1.1s'

**PHYSICS****WORK, POWER AND ENERGY**POWER LABHow Powerful Are You?????

Task: To time yourself running up the stairs.

Observations:

- Your mass (in kg)
- The height of the stairs (in m)
- The time it took you to run up the stairs (in s)

Procedure:

- The force you experience as you go up the stairs is gravity

$$F_g = mg$$

- Calculate the force and then use that force to calculate your work/energy as you run up the stairs
- Use your work to calculate your power
- **Note:** You can convert your power in Watts to Horsepower by dividing it by 746.
- How does your power running up the stairs compare to a horse?



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HOMEWORK

Pg. 229 # 1-5, 7, 8 (Work/Energy)

Pg. 251 # 1-3 (Power)

Pg. 254 # 1-3 (Power)