

Senior Physics

1 class period

Joe C.

#3: Big Idea - cal. own power

Your Power

Just to calculate power

Objective: We will calculate our power as a change in potential energy divided by time. Then we will compare our power to our classmates and to some common household devices such as a light bulb or lawn mower.

- Process:**
- A. Obtain 1 meter stick and 4 stopwatches for the entire class.
 - B. Measure the height of each half flight of stairs.
 - C. Run up 1/2 a flight of stairs, timing yourself simultaneously.
 - D. Repeat C.
 - E. Record your best time.
 - F. Calculate your power.
 - G. Draw a conclusion.

Q-Construction of knowledge -

get Anthony's data

* save them formulas

Start of unit 2/3 class - Intro to

Activity: Find your mass in kilograms. Either use the scale, or convert your weight (lbs/2.2 = kg)
Record the height of the flight you are going to climb.

Hypothesize What common household item do you think you are as powerful as?

Change order? Should this be first.

- Record your best time.
- Calculate your work ($mgh_f - mgh_i$)
- Calculate your power (work/time)
- Convert your power to horsepower (Power (W) / 746)
- Compare yourself to your partner, and to the items below.

Evaluate Interpret

Name	Mass (kg)	Height of Stairs (m)	Work to Climb (J)	Time (s)	Power (W)	Power (hp)

Choose the item below that is closest to your power.

Item	Power (W)	Item	Power (W)	Item	Power (W)	Item	Power (hp)
Clock	4	100W Bulb	100	Fridge	600	Weed Trimmer	1
CD	15	Blender	200	Vacuum	750	Lawn Mower	3.5
VCR	30	Fan	250	Microwave	800	Go-cart	15
Radio	50	Color TV	300	Iron	1000	Snowmobile	25
60W Bulb	60	Computer	400	Toaster	1150	Automobile	160

CK/3
ESC 2
VBS 1
Observations
Analysis
Comment
date?

- Questions:**
- Compare the work you and your partner did climbing the stairs. Who did more work?
 - Compare your power to your partner's. Who developed more power?
 - How could you increase your power output?
 - Would you feel more or less tired as a result of increasing your power?

Real life scenarios? What factors might impact your change?

Questions - where would you use power (output/work) in outside classroom?

#3 data table
1/3 data table
OS
universe look
major point