

Name Key

Hour _____

Electricity at Home Lab

Find meter DUE Tues/Wed

Data DUE Thurs

Lab DUE Fri

If you live in an apartment or don't have access to your electric meter, you will need to work with another student!

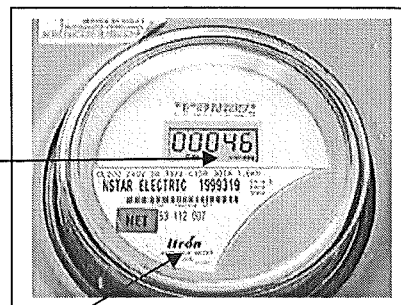
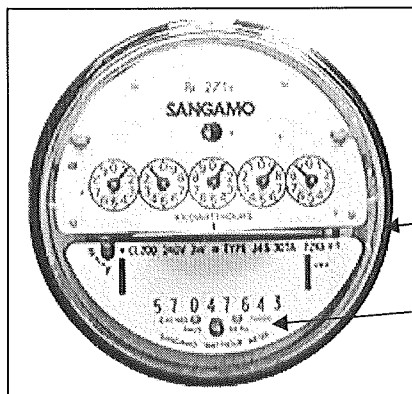
Whose house are you at? Student Name: _____

This activity will cost you less than \$0.50. Thank you! Mrs. B.

How to read your Electric Box: (grey box on outside of house)

Analog electric meter:

Digital Electric Meter



Arrows or blocks that light up

Spinning disk

Kh value somewhere on your electric meter

Kh = _____

1. What is the K_h value from your electric meter? (usually 1 or 7.2)
2. The K_h value is equal to the **work done** in **watt hours** during the time it takes to spin around 1 time.
3. If your K_h value was 3.6, how much work was done during the time it took to spin around one time?

3.6 watt-hrs

4. Let's say that your electric meter has a K_h reading of 2 and it takes the disk 28 seconds to spin once. How much power did you use?

$$W = 2 \text{ watt-hrs}$$

$$\Delta t = 28 \text{ sec} \times \frac{1 \text{ hr}}{3600 \text{ s}} = 0.00778 \text{ hr}$$

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

$$\frac{2 \text{ watt-hr}}{0.00778 \text{ hr}} = 257 \text{ watts} \\ 0.257 \text{ kW}$$

* Your house used 0.257 kW during timing

5. What would it cost you if those appliances were running for 24 hours?

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

$$0.257 \text{ kW} = \frac{W}{24 \text{ hr}}$$

$$P = 0.257 \text{ kW} \\ \Delta t = 24 \text{ hr}$$

$$W = 6.168 \text{ kWh} \times \frac{\$0.101}{1 \text{ kWh}}$$

\$0.62 or 62¢