

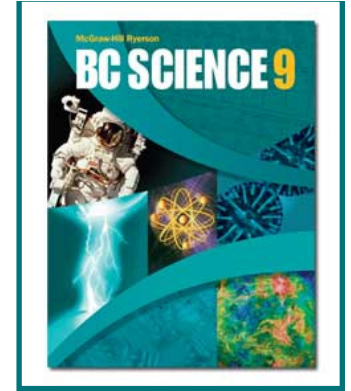
These notes are posted on my site for the following reasons:

- **for students to copy in their own hand-writing**
 - **in order to complete their class notes**
 - **if student did not have enough time in class**
 - **if student was away and missed this section**
- **for assistants and tutors to follow progress of the concepts taught**

Photocopied/printed notes can not be used during the Unit Notebook Check in class.

ndupuis@sd61.bc.ca dupuis.shawbiz.ca

9.2 The Power of Electricity



Power

- Power is the rate of change in energy, the rate at which work is done.
- Power is measured as units of energy (joules) per second, one joule per second is a watt (W)
- Electrical power is the rate of change in electrical energy. For example, a 25 W fluorescent bulb converts 25 joules per second of electrical energy into other forms

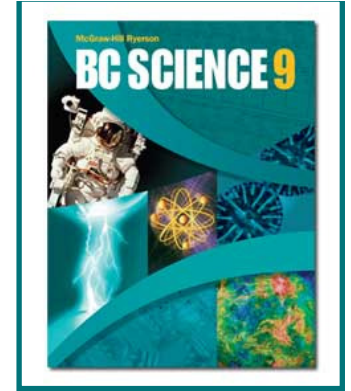
Calculating Power and Energy Consumption

- $\text{Power} = \text{Voltage} \times \text{Current}$
- $\text{Energy} = \text{Power} \times \text{Time}$
- Therefore, if you know the voltage a device is connected to, and how much current flows in it, you can calculate the power of the device. Knowing how long the device is used allows you to calculate how much energy it consumes.



See pages 320 - 324

Paying for Electricity



A Larger Unit for Energy

- A joule is a very small amount, so the energy supplied to the home is usually calculated in much bigger units
- Instead of using watts - kilowatts are used
- Instead of using seconds - hours are used
- The company keeps track of **kilowatt•hours**

Paying Your Power Bill

- When the power company has determined how many kilowatt•hours you have used, they then bill you by multiplying how much you have used by the cost per kW•h
- The power company keeps track of your energy usage by reading your electric meter



[Take the Section 9.2 Quiz](#)

See page 325