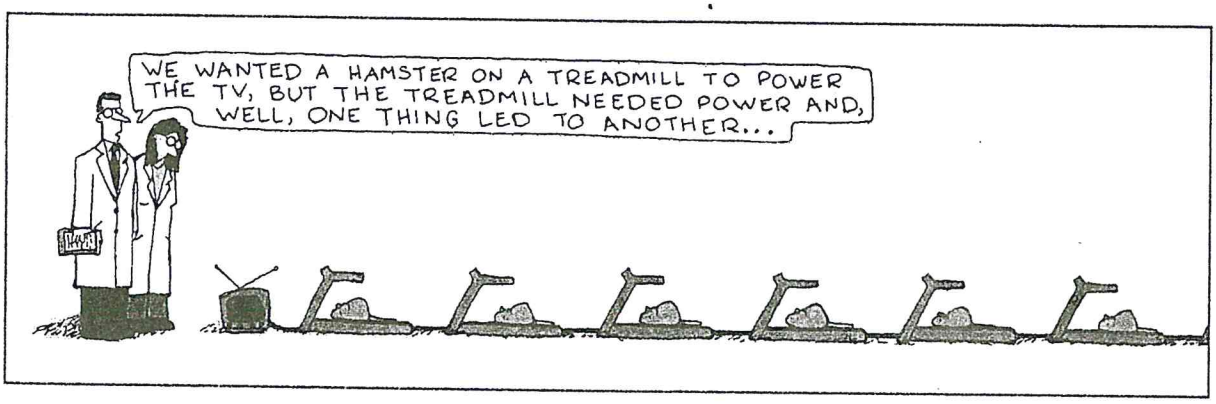
Renewable Energy Math Worksheet

Name: _____



1. Biomass accounts for approximately 14% of all fuel consumption in the world. What fraction of all fuel consumed is biomass?

2. In a developing country, most of their biomass fuel comes from wood (1/4), crop residues (1/3) and animal waste (1/8). What is the *total* fraction, decimal, and percentage amount from these three sources?

3. Suppose you are interested in incorporating several solar energy concepts into your home. You are told that you can save approximately 1/5 on basic electric costs and an additional 1/3 on heating costs.

   A. What fraction of your utility bill will you save by using solar heat?

B. If your monthly utility bill is approximately, $125.00, how much money could you save on your bill each month?

4. If wind turbines were installed in the Great Plains, along coasts, and in windy areas, wind energy could fulfill 20% of the U.S. energy need. What fraction of the U.S. energy need ***wouldn't*** be filled?

5. Only 7.5% of the energy consumed in the U.S. is renewable energy, and 40.8% of the energy consumed in the U.S. is petroleum gas. What fraction of the total energy used in the U.S. is renewable energy and what fraction is petroleum?

6. In percent, how much more Petroleum is consumed than renewable energy?

7. If energy efficient light bulbs use 75% less energy, what fraction of energy is wasted by a traditional light bulb?

Renewable v.s Non-renewable

3Mworldlywise

Write down the advantages and disadvantages of renewable and non-renewable energy resources into the table below.

Energy resource	Advantages	Disadvantages
Renewable		
Non-renewable		

What are the non-renewable energy resources and how are they used?

List renewable energy resources and for each one say where the energy comes from.

Electricity running costs

3Mworldlywise

1. Find out how much a unit (one kilowatt-hour) costs from an electricity supplier in your area. _____
   Fill in the table below to find out how much you spend on electricity each day.

Item	Average daily use (hours)	Power rating (kW)	Units used per day (kWh)	Cost per day = units used x cost per unit
Low energy light bulb	8	0.02	8 x 0.02 = 0.16	0.16 x cost
Video/DVD		0.02		
60W light bulb		0.06		
Digital/cable box		0.09		
Fridge/freezer		0.10		
Television		0.17		
Stereo system		0.29		
Personal Computer		0.33		
Microwave		0.80		
Dishwasher (cold fill)		1.67		
Washing machine at 40°C		1.67		
Fan heater		2.00		
Washing machine at 90°C		2.53		
Tumble dryer		2.90		
Kettle		3.00		
Conventional oven		3.2		
Average daily cost of using these appliances (add up the right-hand column)				

2. Some suppliers charge different amounts for a unit (kilowatt-hour) of energy depending on the time of day. Night-time energy is usually cheaper. Why do you think this is?

_____

_____

3. Which devices could you use less to save energy and money?

_____

_____