

# How Happy are You and Your Family with the Electricity Bill?



## Student Activities

### The Scenario

Today, thanks to technological achievements, more and more equipment needs electric power to operate. Think what would happen if there was a black-out right now! What would be out of action? Unfortunately, as a result of the heavy use of electrical devices, the household electricity bill has become an important part of the family budget. But are you happy with this? Would you be interested in influencing the members of your family to see how it might be possible to reduce this bill? What devices are large users of electricity? Are they essential?

Below is an example of an Electricity Bill:

**The Electricity Bill**

<b>1</b> Account Number 52452-01	<b>2</b> Customer Number 002236	<b>3</b> Billing Date 10/01/97	<b>4</b> AMOUNT DUE \$13.33	<b>7</b> Current Due Date 10/02/97
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DOE, JOHN  
11 A HONDO ST  
BELIZE CITY  
BELIZE

Please present this portion when paying, or mail in with cheque

Cycle/Road/Walk  
115/001/0965 **8**

Meter Number	Rate	Reading		Meter Mults.	No. Days	Consumption (Kwh)	Peak Demand (Kw)	Charges
		Previous	Present					
0009054830		4823	4960	1.0	25	43		\$13.33

**11 12 13 14 15 16 17**

Account No. 00052452-01 Customer No. 002236 Service Location: <b>18</b> 11 A HONDO ST BELIZE CITY	<b>BILLING DETAILS 19</b> BALANCE FORWARD \$0.00 <b>5</b>
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Electrical Usage History <b>20</b>			
Month	Days	Consumption	Kwh/Day

Reading Dates <b>21</b>	
From	12/12/96
To	09/01/97
Total Amount Due: \$13.33 <b>6</b>	
Payment Due Date: 10/02/97	

Keep this portion for your records

Developer: Jack Holbrook

Institute: International Council of Associations for Science Education (ICASE)  
Country: UK



## Your Task

*Within the whole Class:*

1. Discuss/compare different electricity bills and find out which parameters/factors contribute to the total amount paid. Mention which of them are “internal” (from the family) and which are “external” (from the state).
2. Discuss the questions that will be included to create a questionnaire for the proposed research to find out which appliances are used in the home and for how often.

*In Groups:*

1. Each group is required to put forward 5 questions in a short time.
2. Discuss the questions and from the sources create a common questionnaire.
3. Each member of the group takes the responsibility to give the questionnaire to her/his family, plus one more family and bring responses to the next class.
4. Decide the selection of different house electric equipment for each group to study their power, energy transformation and energy consumption in a period of time.
5. Design and carry out an experimental investigation to determine the consumption of each equipment selected.

*In Groups:*

1. Look over a part of the completed questionnaire (2 – 3 questions per group) and present the outcomes in bar diagrams or tables.
2. Prepare a presentation of the experimental results (measurements, calculations, etc).
3. Discussion and presentation of the conclusions of the equipment studied.

*As a Class:*

1. Presentation, discussion and comparison of each group's outcomes.
2. Reach final conclusions on:
  - How it might be possible to reduce the electricity Bill.
  - What is meant by power and how important is it to be aware of this in determining items to reduce on the electricity bill?
  - Protecting the environment (power stations, fuels needed)
  - Effect on the State budget (fuels imported)
3. Discuss whether people are generally happy with their electricity bills or whether they would welcome guidance on how to reduce the bills (bearing in mind the percentage reduction you might be able to put forward) and determine certain ideas as proposals in order to change habits on consuming electric energy.

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