OBJECTIVE
Determine the energy required to run various appliances

ANSWER KEY

<table>
<thead>
<tr>
<th>APPLIANCE</th>
<th>DAILY WATTS*</th>
<th>HOURS USED PER MONTH</th>
<th>WATTS USED PER MONTH</th>
<th>EQUIVALENT KWH</th>
</tr>
</thead>
<tbody>
<tr>
<td>TELEVISION</td>
<td>113</td>
<td>X 60 HOURS</td>
<td>=6,780</td>
<td>=6.78</td>
</tr>
<tr>
<td>COMPUTER &amp; MONITOR</td>
<td>270</td>
<td>X 120 HOURS</td>
<td>=32,400</td>
<td>=32.4</td>
</tr>
<tr>
<td>CLOTHES WASHER</td>
<td>425</td>
<td>X 20 HOURS</td>
<td>=8,500</td>
<td>=8.5</td>
</tr>
<tr>
<td>CLOTHES DRYER</td>
<td>3,400</td>
<td>X 20 HOURS</td>
<td>=68,00</td>
<td>=68</td>
</tr>
</tbody>
</table>

1. (Total Monthly kWh x 3,400); 115.68 x 3,400 = 393,312 Btu
2. (Total Btu ÷ 1,031); 393,312 ÷ 1,031 = 381.49 cubic feet of natural gas

CHALLENGE ANSWERS FOR THE PROS AND CONS CHART MIGHT INCLUDE:

<table>
<thead>
<tr>
<th>TYPE OF FUEL</th>
<th>PROS</th>
<th>CONS</th>
</tr>
</thead>
</table>
| COAL         | - Inexpensive  
- Well established  
- Large amounts available for many years  
- Can be used to generate electricity | - Air pollution  
- Nonrenewable  
- Negative impacts of mining  
- Safety issues  
- Restoration issues |
| OIL          | - Widely available  
- Well established distribution network  
- Cars are currently designed to run on gasoline | - Air pollution  
- Nonrenewable  
- Getting more expensive  
- Increase worldwide demand (e.g., China, India) affects price |
| NATURAL GAS  | - Widely available  
- Burns more cleanly than coal and oil (lower CO₂ emissions)  
- Easily transported | - Cleaner burning than others but still has emissions  
- Nonrenewable  
- Price fluctuates |

NATIONAL STANDARDS
Science
Standard 9. Understands the sources and properties of energy  
Standard 12. Understands the nature of scientific inquiry

Math
Standard 1. Uses a variety of strategies in the problem-solving process  
Standard 2. Understands and applies basic and advanced properties of the concepts of numbers  
Standard 3. Uses basic and advanced procedures while performing the processes of computation  
Standard 9. Understands the general nature and uses of mathematics

Geography
Standard 7. Knows the physical processes that shape patterns on Earth’s surface  
Standard 14. Understands how human actions modify the physical environment  
Standard 16. Understands the changes that occur in the meaning, use, distribution, and importance of resources  
Standard 18. Understands global development and environmental issues

TIME CONSIDERATIONS
Approximately one class period