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CLIMATE CHANGE ARTICLE 1

Before first class, find and insert articles in boxes in STUDENT JOURNAL before printing.

Article 1: California Fires

Article can be found at: http://www.msnbc.msn.com/id/24776666/

Question:

Do you think what happened to the people in the article is fair? Why or why not? What could you do in your own life to reduce the risk of such impacts on others?
Article 2: Bangladesh Floods

Article can be found at: http://news.bbc.co.uk/go/pr/fr/-/1/hi/sci/tech/5344002.stm

Question:

Do you think what happened to the people in this article is fair? Why or why not? What could you do in your own life to reduce the risk of such impacts on others?
Electricity Lifecycle

Clothesline Relay

Answer these “Before” Questions:

1. How long do you think it takes to hang dry clothes? Very Short 1 2 3 4 5 Very Long
2. Do you think it is easy or hard? Very Easy 1 2 3 4 5 Very Hard

Answer these “After” Questions:

1. How long did the fastest group take? ______
2. Would you consider this a long or short time? Very Short 1 2 3 4 5 Very Long
3. How many clothes items were put up by the fastest group? ______
4. About how many clothes items do you typically do in a load? ______
5. Did you think this activity was easy or hard? Very Easy 1 2 3 4 5 Very Hard

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### Appliance Chart

<table>
<thead>
<tr>
<th></th>
<th>Laptop Computer</th>
<th>Desktop Computer</th>
<th>Desktop Monitor</th>
<th>Printer</th>
<th>Computer Speakers</th>
<th>Television</th>
<th>DVD Player</th>
<th>Boombox/Stereo</th>
</tr>
</thead>
<tbody>
<tr>
<td>On</td>
<td>On</td>
<td>On</td>
<td>On</td>
<td>On</td>
<td>On</td>
<td>On</td>
<td>On</td>
<td>On</td>
</tr>
<tr>
<td>Balloons of CO₂ per hour</td>
<td>2</td>
<td>20</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>70</td>
</tr>
<tr>
<td>Before school</td>
<td>6am - 8am (2 hrs)</td>
<td>4</td>
<td>0.2</td>
<td>40</td>
<td>1</td>
<td>6</td>
<td>4</td>
<td>140</td>
</tr>
<tr>
<td>During school</td>
<td>8am – 3pm (7 hrs)</td>
<td>14</td>
<td>0.7</td>
<td>140</td>
<td>3.5</td>
<td>210</td>
<td>7</td>
<td>28</td>
</tr>
<tr>
<td>After school</td>
<td>3pm – 6pm (3 hrs)</td>
<td>6</td>
<td>0.3</td>
<td>60</td>
<td>1.5</td>
<td>90</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>After dinner</td>
<td>6pm – 10pm (4 hrs)</td>
<td>8</td>
<td>0.4</td>
<td>80</td>
<td>2</td>
<td>120</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Overnight</td>
<td>10pm – 6am (8 hrs)</td>
<td>16</td>
<td>0.8</td>
<td>160</td>
<td>4</td>
<td>240</td>
<td>8</td>
<td>32</td>
</tr>
</tbody>
</table>

| Total Unnecessary Balloons from each appliance | 2 | 10 | 6 | 140 | 14 | 14 | 21 | 14 |

### Total Balloons per day

<table>
<thead>
<tr>
<th></th>
<th>Total Balloons per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>(add total balloons from each appliance)</td>
<td></td>
</tr>
</tbody>
</table>

### Electricity Vampire Data


Procedure for converting watts to 1 liter balloons of CO₂:

1. 1000 watts per hour = 1 kilowatt hour (kWh); 1 kWh = 1.34 lbs CO₂
2. 1 lb CO₂ = ~230 liters of CO₂; Molecular weight of CO₂ = 12+16+16=44
   - (453.6g/1lb)(1mole/44g)(22.5L/1mole) = 232.0 L CO₂ / 1 lb
3. ~3 watts = 1 liter balloon of CO₂
4. (1000 watts / 1 kWh)(1 lb CO₂ / 232.0 L CO₂) = 3.2 watts / L CO₂


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Article 3: Energy Security: Babies in the Northeast

Article can be found at:

http://www.boston.com/news/globe/editorial_opinion/oped/articles/2007/10/21/the_heat_or_eat_dilemma/

Question:

Do you think it's fair that energy insecurity affects babies? Explain why.
Transportation Lifecycle

Behavior (1 mile of transport) | Impact (# of 1L balloons CO2) | Reduce Impact By…
--- | --- | ---
Average passenger car | | |
SUV | | |
Hybrid vehicle | | |

Transportation Activity

**Daily Schedule**

<table>
<thead>
<tr>
<th>Day</th>
<th>Current mode of transport</th>
<th>After school destinations</th>
<th>Items to carry</th>
<th>Potential mode of transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tues</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thurs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fri</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Article 4: Energy Security: Saudi Arabia

Article can be found at: http://www.foxnews.com/story/0,2933,312372,00.html;
Food Lifecycle

Define and give examples for the following terms:

Processed foods: ____________________________________________________________

Whole foods: ________________________________________________________________

Questions:
1. To reduce our impact we can eat non-meat and non-processed foods. How many whole food options do you think are available to you?
   None at all  1  2  3  4  5  6  7  Lots of options

2. Do meals of whole foods sound appealing or exciting to you?
   Not exciting  1  2  3  4  5  6  7  Very exciting

Part 1: Create three new recipes:

DELICIOUS  UNEXPECTED  THEME

Part 2: Select one of the meals to prepare at home during the week. You will bring this in on the last day of the workshop to share with your group. Select a meal that will be easy to transport and to eat in class (bring enough food for your group and bring utensils for yourself).

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Supplemental Readings

Climate Change

Intergovernmental Panel on Climate Change Fourth Assessment Report. (2007). Contains the Synthesis Report, the Summaries for Policymakers and Technical Summaries of the three Working Group volumes, and supporting Annexes. Cambridge University Press, UK. [This is the full report.]
http://www.ipcc.ch/ipccreports/assessments-reports.htm

http://dels.nas.edu/basc/climate-change/basics.shtml

Union of Concerned Scientists. (2007). Findings of the IPCC Fourth Assessment Report: Climate Change Impacts. IPCC Highlight series. [This is a very brief summary of findings from the IPCC reports, put together by an independent organization.]

Energy Security

http://www.washingtonpost.com/wp-dyn/content/article/2008/07/26/AR2008072601025.html

Essential and very brief overview figures and explanations.:
http://www.washingtonpost.com/wp-dyn/content/graphic/2008/07/26/GR2008072601566.html