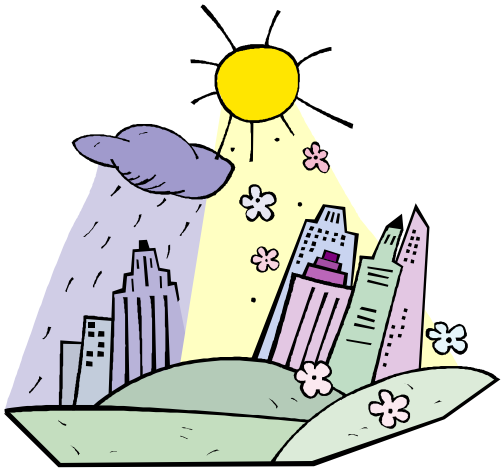
Science 10 Publishing company
A World of Change Project



OBJECTIVE: **To create a magazine on the topic of Energy Flow in Global Systems** (with an Emphasis on the Environment and Society).

Tasks:

- Read through the section detailing the contents which must be included in your magazine and split up the work to be done within the group
- Plan on the calendar when certain tasks will be completed. Keep in mind non-class days are also considered as potential workdays! I have fixed certain dates in advance for lectures or specific work periods on topics essential for the completion of this project. (i.e. a Lab day or Research days).
- **Provide a copy of your calendar for approval by December 9th.**

- Follow your plan. I will check your progress on these dates:
  December 16th, January 6th, and 13th
- Hand in completed project on January 15th, 2008

Contents of Magazine:

The following articles/items must be included in your final magazine. Please read the evaluation guide to ensure that your articles will score maximum points.

- title page (your magazine cover page...with a catchy name!)
- table of contents
- a letter from the Editor on the topic of climate change, and it's impact on the biosphere, that outlines three (3) global effects that are predicted to result from a runaway greenhouse effect. (Be sure to include how the greenhouse effect could precipitate those results!)
- an editorial cartoon (find or sketch one!) that illustrates the issue of global warming from one of the following perspectives - economic, political, scientific, technological, or environmental.
- letters (at least 3) to your magazine from readers (commenting on issues or articles from past issues)

and in any order…

- an article that describes/explains what the accelerated greenhouse effect is.
- an article explaining how evidence such as tree rings, pollen distribution, ice core data (isotopic geochemistry) is used to predict climates from geological history.
- an article on energy efficient technologies and ways of helping businesses go "green"
- an article summarizing "El Nino" and how it affects weather on a global scale
- an article summarizing results of an experiment conducted by students investigating various materials ability to absorb or reflect solar energy (actual experiment/lab report to be included in appendix of magazine)
- minimum of 2 advertisements (one on new technology used to gather information on climate change, the other of your choice)
- cartoon explaining hydrologic cycle role in creating weather
- a "Travel Page" that features two National Parks, one from a location within Canada, the other from anywhere else in the world. The National Parks featured must be from two different biomes. The article should describe the dominant flora and fauna found within each biome, summarize the typical abiotic climate factors (landforms, temperature, moisture, sunlight, wind, etc…) and include climate graphs for each biome.
- an "Ask the Experts Page" answering the question "What is the mechanism by which carbon dioxide gas causes heat to be trapped within the atmosphere?"
- classified ad section including details on at least two conference/meetings on the topic of climate change and one scientific career ad in areas of meteorology or international programs (i.e. World Weather Watch or Intergovernmental Panel on Climate Change…IPCC)
- a games/puzzles page that has the theme "Special properties of Water"

The following **MUST** be incorporated in some way, at some point in your magazine. They must be highlighted or emphasized to demonstrate their importance.

- a definition of the following terms:

greenhouse effect	Coriolis effect	Heat of vaporization
global warming	Biome	Specific heat capacity
climate change	Open system	
albedo	Heat of fusion	

- relationships among solar energy reaching Earth's surface and time of year, angle of inclination, length of daylight
- describe global wind patterns (i.e. Jet streams)
- describe the major characteristics of the atmosphere, the hydrosphere and
- the lithosphere
- interpret how variations in thermal properties of materials can lead to uneven heating and cooling and relate it to climate
- use simple calculations for heat $Q = mc\Delta t$
- use simple calculations of heat of fusion $Q = nH_{fus}$
- use simple calculations of heat of vaporization $Q = nH_{vap}$
- a graph that illustrates the predicted changes in **temperature** which are to occur until the year 2100.
- the role of various gases—including methane, carbon dioxide and water vapour—in determining the scope of the greenhouse effect

The following **could** be incorporated in some way, at some point, in your magazine. They will be considered for bonus marks.

- An explanation of why deforestation (especially rainforest areas) is a concern in reference to global warming.

- Many environmentalists suggest changing to alternative energy sources as a method of reducing emission of greenhouse gasses. Explain why changing to alternative energy sources is not necessarily a good short-term solution to the problem of global warming.

Click here to go to the A World of Change pathfinder.

Project Evaluation

	Climate Magazine Rubric	Poor 1-2	Fair 3-4	Satisfactory 5-6	Exemplary 7-8	Score
Worth 35% of Project	**Layout**	Design of magazine is poorly laid out and contains numerous spelling mistakes and grammatical errors.	Design of magazine is adequate but contains more than 6 spelling mistakes and/or grammatical errors.	Design of magazine is good but contains fewer than 6 spelling mistakes and/or grammatical errors.	Design of magazine is well thought-out and contains fewer than 2 spelling mistakes and/or grammatical errors.	
	Magazine (content-general)	Many articles are inaccurate or plagiarized.	Articles are somewhat factual but with few details and/or demonstrate limited understanding of topics covered.	Articles are factual with many details demonstrating a satisfactory understanding of topics covered.	Articles demonstrate in-depth understanding of topics covered and are very well written	
	Illustrations	Very few illustrations in magazine or illustrations show very little effort.	Several illustrations in magazine but illustrations poorly represent criteria of article.	Most articles are supported by appropriate illustrations in magazine. Illustrations add to overall quality of magazine.	All articles are supported by well-chosen illustrations that greatly enhance reader's understanding of topic.	
	Table of contents and references	Three or more of the following are missing: name of magazine, names of editors, names of articles and their page numbers, sources of information	Two of the following is missing: name of magazine, names of editors, names of articles and their page numbers, sources of information	One of the following are missing or poorly represented: name of magazine, names of editors, names of articles and their page numbers, sources of information	All of the following are present: name of magazine, names of editors , names of articles and their page numbers, sources of information	
		Required information 1-3	**Format 1-2**	**Scientific thought/ accuracy 1-3**	**Creativity 1-2**	**Score /10**
Worth 65% of Project *These articles will have double the weighting of the other articles	**Articles (specific)** • **each article will be evaluated as follows.**	Information is included from a variety of significant resources, is accurate, thorough, and uses appropriate vocabulary.	Evaluated on whether the format of the article accurately reflects the topic.	Evaluated on resourcefulness and appropriate analysis of topic covered.	Evaluated on originality and how novel the approach is in the article's presentation	
	editorial cartoon					
	letters from readers (at least 3)					
	* article on accelerated greenhouse effect					×2
	article explaining climate evidence					
	helping businesses go "green" technology					
	article summarizing "El Nino"					
	* Investigation of the albedo effect					×2
	Advertisements (minimum 2)					
	Hydrologic cycle and weather cartoon					
	* Travel Page (summary of two biomes)					×2
	Ask the Experts Page"					
	Classified ads (conferences and careers)					
	Games/Puzzles page					