

Sacred Heart Catholic High School
SNC 2D
Climate Cause & Effect Relationships

A sound bite is the one line statement that often gets extracted from an interview and becomes the focus of a media report on a given topic. In many cases, these sound bites are pieces of an explanation that end up being reported and accepted as facts.

Your Task

You are a journalist working for a major network. The science editor has asked you to investigate a **hypothesis** about cause and effect relationships related to climate change. Before the anchorman reads the headline "This causes that!" on the evening news, the editor wants YOU to make sure the network can support the connection.

In a science lab, you make impartial, qualitative and quantitative observations about your experiment and you use these *observations*, logic and background facts and information to reach a conclusion. For this assignment, you will be using these *analysis* skills to connect someone else's *observations* to their *conclusions* or predictions. You will research articles from international journals, summary reports etc where scientists have made this statement. You will need to summarize the articles and provide background knowledge of processes and elements of climate to explain WHY the person has their hypothesis and what support for the hypothesis was found.

The anchorman wants to say that A is the cause, D is (or will be) the effect. Find B and C to bridge these two by answering some of the questions below.

Because your science editor wants to present a balanced viewpoint, he will be recruiting another team of researchers to present a counter argument to your findings. You should know what each other are researching, but you will be looking to support very different hypotheses.

Guiding Questions

SUPPORT (Circumstantial/data and explanatory/science laws)

- 1 - What observations have been gathered about the cause? The effect?
- 2 - How is this information gathered? Describe the science.
- 3- Who is researching it? Who is sponsoring this research? (Eg. NSERC, UN IPCC, Suzuki Foundation, Richard Branson..?)
- 4- What has been found in the way of evidence to connect the cause to the effect? (Be careful to not be distracted by reports that say "85% of scientists agree." This is a census, not an explanation.)
- 5- What are some of the missing pieces of this "connection"?
What do you find hard to believe about this relationship?
What are some elements of the current body of evidence that do not support the hypothesis?

Example: Industrialization is a cause of increased greenhouse gas production which in turn has resulted in increased global temperatures.

1940 - 1970 temperatures decreased despite global boom in industrialization.

OPPOSITION

- 1 - Who is challenging this theory? Who is sponsoring this research?
- 2 - What alternate explanations are there for this specific cause and effect relationship?
- 3 - What alternate outcomes are predicted for this particular observed phenomena?
- 4 - What principles/evidence is this alternate explanation based on?

BOTH GROUPS

Before you began your research, which of these two perspectives were you most familiar with? Which were you most in agreement with? Has this changed?

Possible sound bites (and alternatives)

1 - Consumption of Fossil Fuels result in atmospheric CO₂ increases
(Possible alternative) Deforestation is the main cause of global CO₂ increase

2 - CO₂ increase results in rise in temp

Increased solar activity results in warmer temperatures.

3 - Rise in temp results in less area of ice cover

?????

4 - Rise in temp results in increased severe weather(hurricanes, tornados)

Severe weather is more common in less stable climates(periods of historically cool climates) than in stable warm climates

5 - Rise in temperature results in increased drought desertification

Rise in temperatures results in a faster hydrologic cycle and more rainfall.

6 - Rising temperatures have negative impacts on agriculture.

Rising temperatures result in improved farming in upper latitudes where the bulk of American and European land is.

7 - Changes in climate patterns are contributing factors to an increase in the number of smog days in Ontario and elsewhere in Canada.

The increased number of smog days in Ontario is a combined result of more vehicle emissions and a greater sensitivity in detecting smog or changes in how smog days are designated.

8 - Recent extreme weather events such as storms, heat waves and drought have affected habitats in various regions much more than in previous decades.

Reports of increased effects of adverse weather are based on insurance claims which are more prevalent today than they were 50 years ago.

9 - The reduction of polar sea ice will have irreversible devastating impacts on species such as polar bear

The continuing reduction of the polar ice cap will eventually be beneficial for domestic and international transportation and shipping

FORMAT AND DEADLINES FOR PRESENTATION

THE PERSUASION:

You will need to create a persuasive argument. A good format for this is the 5 paragraph essay. Introduce your overall hypothesis, and three to four key arguments that support this idea. One of these can be a cause and effect chain, one might be arguments to refute the counter hypothesis, one might be examples of data to support the hypothesis etc. Then you will summarize your arguments in a conclusion.

THE PRESENTATION:

1. You will be required to show a copy of all research notes to the editor 1 day before your broadcast.
2. OPTION 1: NEWS REPORT. You will have 15 minutes maximum to present your news report. It may be in the form of a radio announcement, TV broadcast, podcast, or print article. Your opposition will then present their alternate explanation.
3. OPTION 2: Both groups may choose to present together in a debate format, either scripted or impromptu, alternating between prepared arguments and question and rebuttal periods.

THE SUBMISSION

In addition to presentation, you will be required to submit a ONE PAGE summary of the key points (causes, evidence, effects). This MUST be submitted for copying the day BEFORE the presentations.

DEADLINES

October 25 – Rough work and sources (Notes organizers and extensions of this) are due to editor at the **START** of class.

October 24 - 1 page summary due to editor for copying. You may bring a class set on the day of Presentations (Be ready both days)

SOUND BITE _____

Teacher approval: _____

SUPPORTERS

Name: _____

OPPONENTS _____

Stage 1 - Prepare for Research

a) select a topic in consultation with your teacher; write your topic here

b) look up your topic in any of our print encyclopedias (World Book, Compton's, etc.) internet encyclopedias or in your text

c) **read** the encyclopedia article on your topic **thoroughly**

d) Use the article and the guiding questions at the start of the assignment description to decide on 4 key questions related to **your relationship**. You will use these subtopics to organize your presentation. These may be slightly different for each member of the group.

1 _____

2 _____

3 _____

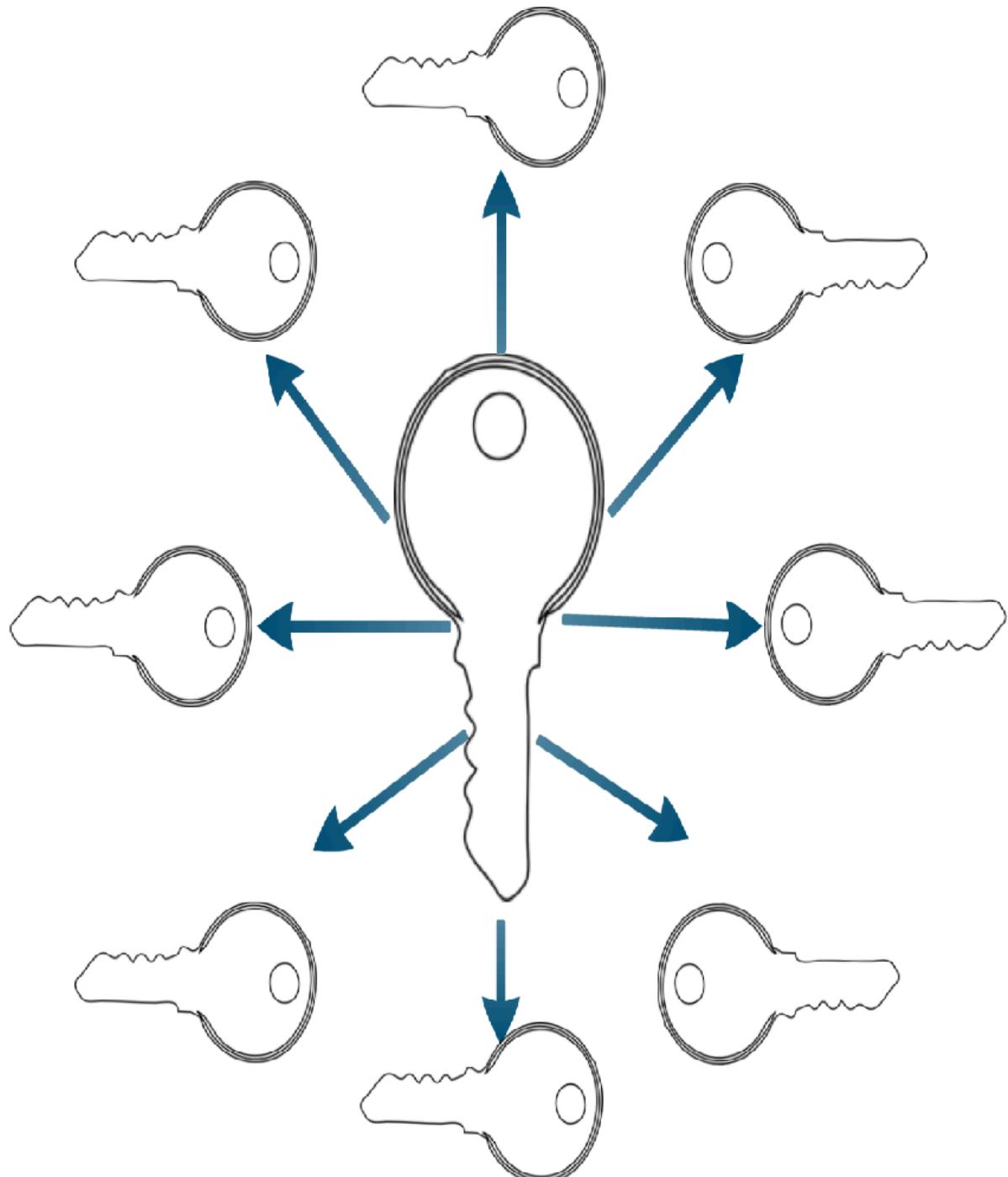
4 _____

e) Have your teacher approve your subtopic questions.

Teacher's approval signature: _____

f) Enter the subtopics in your Information Organizer (pages 9 to 12).

g) Keeping your topic and subtopics in mind, brainstorm possible **keywords** that might help you search for information on your topic. Remember key words can be **more general** than your topic or **more specific**. Many good keywords come from presearching and other research. For example, an encyclopaedia might mention a particular area impacted by climate change or a particular gas influencing the greenhouse effect. These or possibly the names of climatologists researching sea level rise might make good "keys" into some "backdoor research". Enter them on the **keyword** web below so that you can finish the first article you were reading without getting distracted by this new information. Then come back and look them up later:



Teacher's Approval Signature:

Stage 2 - Access Resources and Stage 3 - Process the Information

a) **Encyclopedia Articles** To locate Encyclopedia Articles (1 - 2) on your topic:

- use the keywords and search the indexes of general encyclopaedias such as, *World*

Book, Compton's, Encyclopedia Americana, Academic American, Firefly Space Encyclopedia, Encyclopedia of the Universe

- Read the encyclopedia articles and use the Information Organizer to summarize the information you find for each of your subtopics

* You must put all resource information in your List of Resources Sheet

b) **Books** To locate 1 - 2 books on your topic:(you will likely find books about broader topics, not necessarily your particular relationship)

- Start by opening a web browser and go to <http://library.ocsb.ca> -- NOT WWW
- Be sure to select "Sacred Heart" from the list of schools and select "Login" from the top right corner(SStudent# and Network Password)
- Search for a particular book by author, title, series
- For a **pre screened** list of books
- Click Catalog from the tabs at the top, then "Resource Lists" from the left side bar
- Select "Public" from the tab at the top right then "Grade 9 Science" FOR E-BOOK ACCESS
Find a title with an "E" book icon and select the TITLE of the book. Under "Explore!" near the bottom select "Click here to access the on line version"USER: shchs PSSWD: library

Name of Book	Author	Call Number	Is the book "in" or "out"

- find the books on the shelf
- use the index and/or table of contents to find out if they have the information you need
- read the applicable sections of the book and then use your Information Organizer (page 7 – 9) to summarize the information you find for each of your subtopics

* You must put all resource information in your List of Resources Sheet

c) **Magazine/Journal Articles** To locate 1-2 magazine/journal articles. For electronic databases...

Accessing the Database:

Login to Blackboard using your student account (S##### and Welcome2FL)

On the left hand side under "Quick Links" you will find the title "Gale". Select this.

If you are accessing from home, you will need the password - Gale4OCSB (case sensitive)

FROM SCHOOL: Or you can use the following link -

http://infotrac.galegroup.com/itweb/ko_k12hs_d46

* You must put all resource information in your List of Resources Sheet

Web Sites Locate 1 - 2 web sites on your topic:

- you must complete a "Web Site Evaluation Checklist" for each site you use

Once you have finished your research and processing, discuss with your teacher the sources you have used and the answers you have formulated for each section of your presentation. This can be done individually or as a group.

Teacher approval signature: _____

Stage 4 - Transfer the Learning: Create your presentation

Your final product will be a Presentation in the form of a news report.

Remember your target audience – the average viewer who needs scientific concepts explained.

Your presentation must include:

- 1 page summary handout
- Visual appeal and appropriate graphics (ex: pictures, clip art, video) (These should all be clearly linked to points that you have addressed in your presentation.)

Your presentation format may be/include:

- Powerpoint/Google Slides presentations
- Web Page, Poster
- Use of Overheads
- Inclusion of video/animations etc from digital or VCR sources.

Before your presentation, you MUST have your work reviewed by a peer for clarity. If possible, "practice" your presentation in front of them. If not, have them read your presentation notes and check for how clearly your ideas are presented. There are 4 of you in your group. Therefore that is 3 people who can evaluate each person's portion of the presentation.

Peer approval signature: _____

List of Resources

Book 1

Author:

Title of book:

Place of publication:

Publisher:

Date of publication:

Book 2

Author:

Title of book:

Place of publication:

Publisher:

Date of publication:

Encyclopedia 1

Author of article (if given):

Title of article:

Title of encyclopedia:

Place of publication:

Publisher:

Date of publication:

Pages used:

Encyclopedia 2

Author of article (if given):

Title of article:

Title of encyclopedia:

Place of publication:

Publisher:

Date of publication:

Pages used:

Magazine/Journal 1	Author of article: Title of article: Title of original magazine (source): Date of original magazine: Page number(s): Database name: Date of access: Electronic address of article:
Magazine/Journal 2	Author of article: Title of article: Title of original magazine (source): Date of original magazine: Page number(s): Database name: Date of access: Electronic address of article:
Magazine/Journal 3	Author of article: Title of article: Title of original magazine (source): Date of original magazine: Page number(s): Database name: Date of access: Electronic address of article:

Website Evaluation - for WEB PAGES, not Internet Accessed Journal Articles

Website 1 <ul style="list-style-type: none">▪ Before filling in the information at the right complete the checklist below – you must answer Yes to all three questions to use the site.	Author(s): Title of web page: Title of web site: Date you accessed: URL:	
Authority Is the author of the site clearly stated? Note: author can be an individual, a group of people or an organization. Author's Name: Does the author have appropriate qualifications/reputation to write on the subject? What are his/her qualifications:		Yes No
Content and Accuracy From your own knowledge/other research is the content of the site accurate?		Yes No
Website 2 <ul style="list-style-type: none">▪ Before filling in the information at the right complete the checklist below – you must answer Yes to all three questions to use the site.	Author(s): Title of web page: Title of web site: Date you accessed: URL:	
Authority Is the author of the site clearly stated? Note: author can be an individual, a group of people or an organization. Author's Name: Does the author have appropriate qualifications/reputation to write on the subject? What are his/her qualifications:		Yes No
Content and Accuracy From your own knowledge/other research is the content of the site accurate?		Yes No

Information Organizer

Organize your information on the following pages. Be sure to indicate where the information is from.

Example

Subtopic: Expert scientist presently researching Climate change's impacts on agriculture

Source	Page Number	Details
Book #1	34	<ul style="list-style-type: none">- David Pearson - impacts of how climate chng will alter agriculture- Dr. Pearson is a member of the Faculty of Laurentian University and formerly part of the Canadian Climate Impact Adaptation Research Network
Web page #2	None	<ul style="list-style-type: none">- Jim Smith is a farmer who has been keeping logs of farm output in his area for the past 3 decades
Journal #3	234	<ul style="list-style-type: none">- John Doe works for Texaco Oil co and says that there is no imact of climate change on farming.

Your Research

Subtopic 1: _____

Source	Page Number	Details

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Subtopic 2: _____

Source	Page Number	Details

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Subtopic 3: _____

Source	Page Number	Details

Subtopic 4: _____

Source	Page Number	Details

Climate Change Cause and Effects News Report Proposal

1) **Presentation by group of initial project and its success.** 15 Min

Visual aids needed? _____

Electronics needed? _____

Electronic files checked for compatibility? _____

Summary Sheet submitted? _____