



Global Availability of Freshwater

Plausibility Ratings

•**Model A:** Earth's freshwater is abundant and will remain so even in the face of global climate change.

A person who supports this model makes the following argument:

Earth is closed system. This means that there is no net water loss globally. Even with future impacts of climate change, the amount of freshwater will not change.

•**Model B:** Earth's freshwater challenges will be solved by engineering solutions.

A person who supports this model makes the following argument:

Although the future may bring challenges to maintaining an adequate freshwater supply, technology is rapidly changing. Future engineering solutions will meet any future freshwater challenges.

•**Model C:** Earth has a shortage of freshwater, which will worsen as our world's population increases.

A person who supports this model makes the following argument:

Increasing population will limit the availability of freshwater supplies. Almost all human activities require freshwater. Climate change will further stress availability.



Plausibility Ratings

- Read the three models carefully and quietly.
- They each provide explanations for a specific scientific phenomenon.
- Discuss with partners and eventually as a class to clarify each model.

Plausibility Ratings

Plausibility is a judgment we make about the potential truthfulness of one explanatory model compared to another. The judgment may be tentative (not certain). You do not have to be committed to that decision.

Circle the plausibility of each model. [Make three circles, one for each model.]

	Greatly implausible (or even impossible)									Highly plausible
Model A	1	2	3	4	5	6	7	8	9	10
Model B	1	2	3	4	5	6	7	8	9	10
Model C	1	2	3	4	5	6	7	8	9	10

Plausibility Ratings

What are some factors that you considered when determining the plausibility of the models?

Model Selection

In your work group:

Choose two of the three models to use in the MEL activity.

Place the model card on your worksheet. It will be super helpful if you put them on the sheet in alphabetical order, from top to bottom.

Write the model letter on the line.

Which models did you choose?

A vs B

A vs C

B vs C

Why did you choose those two models?

Why did you exclude the one that you did?



Evidence Selection

Name: _____ Date: _____ Teacher: _____ Period: _____

If you worked with other students, their name(s): _____

Directions: Write the number of each evidence you are using and for each model you have selected in the boxes below. Then draw 2 arrows from each evidence box, one to each model. You will draw a total of 8 arrows.

Key:

	The evidence supports the model
	The evidence STRONGLY supports the model
	The evidence contradicts the model (shows its wrong)
	The evidence has nothing to do with the model

Evidence # _____

Model _____

Evidence # _____

Evidence # _____

Model _____

Evidence # _____

Go through and carefully read each of the 9 lines of evidence and the supporting texts. Think about each question as you read:

Does the evidence support the model(s)?

Does the evidence *strongly* support the model(s)?

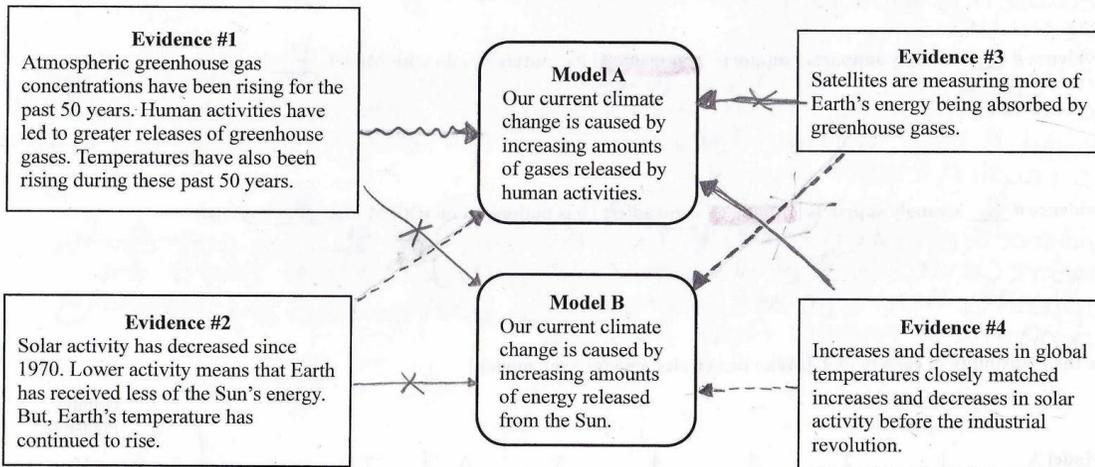
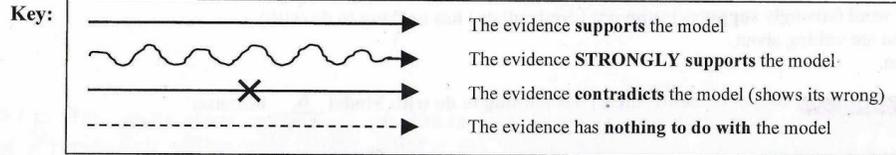
Does the evidence contradict the model(s)?

Does the evidence have nothing to do with the model(s)?

Choose 4 lines and your evidence cards on your worksheet in numerical order, from top to bottom, then left to right. Write the evidence number on the line.

MEL Construction

Directions: Draw 2 arrows from each evidence box, one to each model. You will draw a total of 8 arrows.



Use the additional information for your evidences to help you evaluate the relationship between them and each model.

Draw 2 arrows from each evidence box, one to each model (totaling 8 arrows).

Use the key to show how each evidence relates to the model.

Explanation Worksheet

Name _____ Date _____ Teacher _____ Period _____

1. Please work on this part **individually** after you complete your diagram. Now that you have completed the diagram, reconsider the plausibility of Models A and B (and C, if there is one). Circle the plausibility of each model. [Make one circle for each model.]

	Greatly implausible (or even impossible)									Highly plausible
Model A	1	2	3	4	5	6	7	8	9	10
Model B	1	2	3	4	5	6	7	8	9	10
Model C (if there is one)	1	2	3	4	5	6	7	8	9	10

What were your previous ratings? Model A: _____ Model B: _____ Model C (if there is one): _____

2. Did the plausibility of any of the models change after you completed the diagram? Yes or No [Circle One]

3. Which arrows changed your plausibility judgments about the models? If your plausibility judgments did not change, which arrows supported your original plausibility judgments? Use the following steps to provide an explanation for why your plausibility judgments did or did not change.

- Write the number of the evidence you are writing about. [Note: it is okay to include more than one evidence.]
- Circle the appropriate word (**strongly supports** | **supports** | **contradicts** | **has nothing to do with**).
- Write which model you are writing about. [Note: it is okay to include more than one model.]
- Then write your reason.

Evidence # ____ **strongly supports** | **supports** | **contradicts** | **has nothing to do with** Model ____ because:

4. In your final ranking, did you rank any Model as "1" or "10"? Yes or No [Circle One] Why? Why not?

The final task is for you to individually re-rank the plausibility of each model and choose your most compelling link to explain.

Select the most interesting or important arrow that you feel is the best one. Justify your thinking for choosing this link between the evidence and model in the space provided on the sheet.

Then answer the prompt regarding your final plausibility.

This task is very important so please explain thoroughly.



Explanation Worksheet

Name _____ Date _____ Teacher _____ Period _____

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2. Did the plausibility of any of the models change after you completed the diagram? Yes or No [Circle One]

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- Write the number of the evidence you are writing about. [Note: it is okay to include more than one evidence.]
- Circle the appropriate word (**strongly supports** | **supports** | **contradicts** | **has nothing to do with**).
- Write which model you are writing about. [Note: it is okay to include more than one model.]
- Then write your reason.

Evidence # ____ strongly supports | supports | contradicts | has nothing to do with Model ____ because:

4. In your final ranking, did you rank any Model as "1" or "10?" Yes or No [Circle One] Why? Why not?

Which evidences were most compelling for you? Why?

Did your plausibility scores change?

What about the score for the model you did not select?

How do you think differently about the topics surrounding freshwater resources?



Talk Moves

Which Talk Moves did you use in this baMEL? Why?



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