

How To Argue Using Evidence

Once your group has finished collecting and analyzing your data, you will need to develop an initial argument. Your argument must include a claim, which is your answer to the guiding question. Your argument must also include evidence supporting your claim. The evidence is your analysis of the data and your interpretation of what the analysis means. Finally, you must include a justification of the evidence in your argument. Therefore, you will need to use a scientific concept or principle to explain why the evidence that you decided to use is relevant and important.

Guiding Question:	
Claim:	
Evidence:	Justification:
Economic/Legal/ Social Concerns:	

You will create your initial argument on a whiteboard or file folder. Your board must include all of the information shown here. In the space below the evidence and justification, you may add further concerns and additional questions, especially those related to the impact that your claim may have on social, legal, or ethical issues.

Argumentation Session:

The argumentation session allows all of the groups to share their arguments. One member of each group stays at lab station #1 to share that group's argument. The other members of the group go to lab station #2, one at a time, to listen and to critique the arguments developed by their classmates.

The goal of the argumentation session is not to convince others that your argument is the best one; rather, the goal is to identify errors or instances of faulty reasoning in the initial arguments so these mistakes can be fixed. Therefore, you will need to evaluate the content of the claim, the quality of the evidence used to support the claim, and the strength of the justification of the evidence included in each argument. To critique an argument, you might need more information than what is included on the board. You might need to ask the presenter one or more follow-up questions, such as:

1. How did your group analyze the data, and why did you decide to do it that way?
2. Are there other ways to interpret your analysis?
How do you know that your interpretation is appropriate?
3. Why did your group decide to present your evidence in that manner?
4. What other claims did your group discuss before deciding on that one?
Why did you abandon those alternative ideas?
5. How confident are you that your group's claim is valid?
What could you do to increase your confidence?

Once the argumentation session is complete, you will have a chance to meet with your group and revise your original argument. Your group might need to gather more data or design a way to test one or more alternative claims as part of this process. Remember, your goal at this stage of the investigation is to develop the most valid or acceptable answer to the research question!

Report:

Once you have completed your research, your teacher may ask you to prepare an investigation report consisting of three sections that provide answers to the following questions:

- 1. What question were you trying to answer and why?**

- 2. How did you conduct your investigation and why did you conduct your investigation in this way?**

- 3. What is your claim and your argument based on the evidence?**

Your report should answer these questions in two pages or less. Include any data or charts in your report. Be sure to write in a persuasive style; you are trying to convince others that your claim is acceptable or valid!