CER or ERC? Constructing Explanations & Arguing From Evidence

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Welcome!

INTRODUCE YOURSELF

- Name
- Current Position
### Webinar Resource Dashboard

**CER or ERC? Constructing Explanations & Arguing From Evidence Webinar Dashboard**

**Facilitators:** Rebecca Garelli: Rebecca.Garelli@azed.gov | Sarah Sleasman: Sarah.Sleasman@azed.gov

<table>
<thead>
<tr>
<th>1 General Resources</th>
<th><img src="image1.png" alt="Image" /> Presentation PDF: PDF of Slides  <img src="image2.png" alt="Image" /> Helping Students Make Sense of the World Book</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Categories of Science &amp; Engineering Practices</td>
<td><img src="image3.png" alt="Image" /> Assessing Practices Along a Continuum Article from NSTA  <img src="image4.png" alt="Image" /> The Wonder of Science 3-D Cards</td>
</tr>
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<td>3 Bozeman Science Videos with Paul Anderson from the Wonder of Science</td>
<td><img src="image5.png" alt="Image" /> Constructing Scientific Explanations  <img src="image6.png" alt="Image" /> Engaging in Argumentation  <img src="image7.png" alt="Image" /> The Wonder of Science</td>
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<td><img src="image8.png" alt="Image" /> SEP Progression Doc</td>
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<td><img src="image9.png" alt="Image" /> Argumentation and Explanation Tools for Using Them Together While Keeping Them Separate Article by Brian Fبلغ  <img src="image10.png" alt="Image" /> STEM Teaching Tool #1-Is it important to distinguish between the explanation and argumentation practices in the classroom?</td>
</tr>
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<td>6 Argumentation Toolkit Website</td>
<td><img src="image11.png" alt="Image" /> <a href="http://www.argumentationtoolkit.org/">http://www.argumentationtoolkit.org/</a></td>
</tr>
</tbody>
</table>

Gray- means we will open and use

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**MAKE A FORCED COPY**

To: Everyone

done

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![Image](image12.png)

![Image](image13.png)
Goals for Today

• Explore the differences and connections between two of the Science & Engineering Practices (SEPs)- Constructing Explanations & Arguing from Evidence

• Learn how to engage students in speaking and writing like scientists through using a strategy called “Claims, Evidence, Reasoning (CER)” using scaffolds & supports.

• Deepen understanding of additional ways to engage and assess students on the SEP Arguing from Evidence
Community Norms/Shared Agreements

• We honor each other and all our voices

• We actively and respectfully listen and speak to one another

• We commit to the group by contributing to the learning of others through active participation in this web seminar.

Adapted from NSTA’s Webinar- Transforming Science Learning: Acting, Thinking and Talking as Scientists. Engaging Students in Science and Engineering Practices on 8/12/20
Recommended Book

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information
1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations
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5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information
Grouping the Practices

- Defining Problems
- Planning and Carrying Out Investigations
- Mathematics
- Developing and Using Models
- Analyzing and Interpreting Data
- Constructing Explanations
- Asking Questions
- Computational Thinking
- Designing Solutions

Natural World → Investigating Practices → Data → Sensemaking Practices → Explanations and/or Models

Critical Practices
- Engaging in Argument from Evidence
- Obtaining, Evaluating, and Communicating Information

Phenomenon: Observable events in the real world
### 3 Categories of Science & Engineering Practices

<table>
<thead>
<tr>
<th>Investigating Practices</th>
<th>Sensemaking Practices</th>
<th>Critiquing Practices</th>
</tr>
</thead>
</table>

- **Investigating Practices**
  - 1. Asking Questions
  - 3. Planning & Carrying Out Investigations
  - 5. Using Mathematical & Computational Thinking
- **Sensemaking Practices**
  - 2. Developing & Using Models
  - 4. Analyzing & Interpreting Data
  - 6. Constructing Explanations
- **Critiquing Practices**
  - 7. Engaging in Argument from Evidence
  - 8. Obtaining, Evaluating, & Communicating Information
What resonated with you MOST about this SEP?

What *new* learning occurred for you?
SEP 6: Constructing Explanations Summary

Good Explanations:
- Identify a scientific **cause**
- Identify the components of the system
- Use connections between the components to explain, describe and predict
- Represent the components of the system mathematically
- Use computational thinking

![Constructing Explanations Diagram](image-url)

1. Describe the phenomenon.
2. Brainstorm possible causes.
3. Identify a scientific **cause**
4. Describe a causal **mechanism**
5. Formulate a research question.
Elements:
Specific pieces of knowledge and skill that make up the practice at each grade band.

Increasing sophistication
SEP 7: Engaging in Argument from Evidence Video

What resonated with you MOST about this SEP?
What is one take-away you have?
SEP 7: Engaging in Argument from Evidence Summary - ECR

How do you know?
Engaging in Argument From Evidence

Evidence Reasoning Claim

Good Arguments:
- Obtain, evaluate and organize the evidence
- Identify patterns within and between datasets
- Identify a claim
- Link the evidence and claim with a chain of reasoning.
- Communicate information using the appropriate style and format

Obtaining, Evaluating, and Communicating Information

Patterns

Analyzing and Interpreting Data

What do you notice?
- What are the parties?
- How does it change?
- What stays the same?
- What is relevant?

Identify the Research Question

Make a Claim
Link claim and evidence with Reasoning

Asking Questions
### SEP: Engaging in Argument from Evidence

#### K-12 Science and Engineering Practices Progression Matrix of Elements

For use with Arizona Science Standards

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Engaging in Argument from Evidence</strong></td>
<td>Engaging in argument from evidence in K–2 builds on prior experiences and progresses to comparing ideas and representations about the natural and designed world.</td>
<td>Engaging in argument from evidence in 3–5 builds from K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world.</td>
<td>Engaging in argument from evidence in 6–8 builds from K–5 experiences and progresses to constructing a convincing argument that supports or refutes claims about either explanations or solutions about the natural and designed world.</td>
<td>Engaging in argument from evidence in 9–12 builds from K–6 experiences and progresses to using appropriate and sufficient evidence and scientific reasoning to defend and critique claims and explanations about the natural and designed world. Arguments may also come from current scientific or historical episodes in science.</td>
</tr>
<tr>
<td>Argumentation is the process by which explanations and solutions are reached.</td>
<td>Identify arguments that are supported by evidence.</td>
<td>Construct and/or support scientific arguments with evidence, data, and/or a model.</td>
<td>Construct, use, and present oral and written arguments supported by empirical evidence and scientific reasoning to support or refute an explanation or a solution to a problem.</td>
<td>Critique and evaluate competing arguments, models, and/or design solutions in light of new evidence, limitations (e.g., trade-offs), constraints, and ethical issues.</td>
</tr>
<tr>
<td>In science and engineering, reasoning and argument based on evidence are essential to identifying the best explanation for a natural phenomenon or the best solution to a design problem.</td>
<td>Listen actively to others’ explanations and arguments and ask questions for clarification.</td>
<td>Compare and refine arguments based on the strengths and weaknesses of arguments presented.</td>
<td>Evaluate the claims, evidence, and reasoning behind currently accepted explanations or solutions to determine the merits of arguments.</td>
<td></td>
</tr>
<tr>
<td>Scientists and engineers use argumentation to listen to, compare, and evaluate competing ideas and methods based on merits.</td>
<td>Make a claim about the effectiveness of an object, tool, or solution that is based on relevant evidence.</td>
<td>Respectfully provide and receive critiques on scientific arguments with peers by citing relevant evidence and posing specific questions.</td>
<td>Construct a counter-argument that is based on data and evidence that challenges another proposed argument.</td>
<td></td>
</tr>
<tr>
<td>Scientists and engineers engage in argumentation when investigating a phenomenon, testing a design solution, resolving questions about measurements, building data models, and using evidence to identify strengths and weaknesses of claims.</td>
<td>Make a claim about the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem.</td>
<td>Respectfully provide and receive critiques on scientific arguments by citing relevant evidence and posing and responding to questions that elicit pertinent elaboration and detail.</td>
<td>Make a defense about the natural world or the effectiveness of a design solution that reflects scientific knowledge, and student-generated evidence.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Compare two arguments on the same topic and analyze whether they emphasize similar or different evidence and/or interpretations of facts.</td>
<td>Evaluate a claim for a design solution to a real-world problem based on scientific knowledge, empirical evidence, and logical arguments regarding relevant factors (e.g., economic, societal, environmental, ethical considerations).</td>
<td></td>
</tr>
</tbody>
</table>
Key Differences Summary

### Sensemaking Practice

| 6. Constructing Explanations | Students do not create scientific explanations. | Students attempt to create scientific explanations, but students' explanations are descriptive instead of explaining how or why a phenomenon occurs. Students do not use appropriate evidence to support their explanations. | Students construct explanations that focus on explaining how or why a phenomenon occurs. Students do not use appropriate evidence to support their explanations. |

### Critiquing Practice

| 7. Engaging in argument from evidence | Students do not engage in argumentation. | Students engage in student-driven argumentation. The student discourse includes evidence and reasoning that links the evidence to their claim and critique of competing arguments during which students build on and question each other's ideas. | Students do not engage in argumentation. |

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**FIGURE 4** Science Practices Continuum assessment tool
The Basics of C-E-R & Misconceptions

Claim is not an opinion—it is any idea from investigation designs, questions, models, interpretations of data that the students are supporting and can be questioned or revised.

Confusing! CER actually reflects only the practice of Engaging in Arguing from Evidence (not constructing explanations)

see p. 212 for more info
The C-E-R Framework is Really E-R-C

C-E-R Framework

McNeill & Krajcek (2012)

Borrowed from Katherine McNeill's NSTA Presentation- Beyond CER
Resources on Argumentation vs Explanation

Is it important to distinguish between the explanation and argumentation practices in the classroom?

What Is The Issue?
The vision laid out in the NRC Framework for K-12 Science Education asks learners to engage in the science practice of 'constructing explanations' and also in 'argument from evidence' (along with six other practices). But, some curricula and PD resources don’t make this distinction. They integrate argumentation into explanation and say that it isn’t important for students to understand the difference. Does it matter in the classroom?

WHY IT MATTERS TO YOU
- Teachers should help students understand how scientific knowledge is produced through explanation and argumentation.
- District staff and PD providers should emphasize the distinction between explanation and argumentation in PD and provide instructional supports and models of each to teachers.
- School leaders should learn to recognize what it looks like for students to learn science through argumentation and explanation.
Argumentation Elements

**Evidence**
Students use high-quality evidence to support their claims.

**Reasoning**
Students make clear how their evidence supports their claim.

**Interactive**
Students build off of and critique each others’ ideas.

**Competing Claims**
Students critique competing claims.

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**The Argumentation Toolkit**

Building a Culture of Argumentation

The Argumentation Toolkit is a collection of resources designed to help teachers understand and teach scientific argumentation.
Let's Try It: To GMO or Not?

**Objective**

Students will make and defend a claim stating their position (i.e. argue) regarding the creation and use of genetically modified organisms with consideration of its pros and cons.

**Big Idea**

Biotechnology (and genetic engineering in particular) can produce changes that are helpful or harmful.

*Essential HS.L3U3.26 Engage in argument from evidence regarding the ethical, social, economic, and/or political implications of a current genetic technology.*
To GMO or NOT?

What's wrong with our food system

Birke Baehr

At a TEDx event, 11-year-old Birke Baehr presents his take on a major source of our food -- far-away and less-than-picturesque industrial farms. Keeping farms out of sight promotes a rosy, unreal picture of big-box agriculture, he argues, as he outlines the case to green and localize...
Alone Zone- 1 minute
Think about what you saw and heard in the TED talk.

Whole Group Waterfall Chat - 30 seconds
Type one main point in the chat that resonated most with you from the TED talk.

Type in chat box, but DO NOT HIT ENTER!
(wait for countdown- 3,2,1..waterfall!)
4 Corners Discussion Talk Through

Mildly Agree

Mildly Disagree

Strongly Agree

Strongly Disagree
Make a sticky note with your initials and move it to the corner that best matches Bierke’s view.
Make one sticky note that describes your reasoning for choosing that corner.

**Why did you choose that corner?**
Genetically Modified Foods: Harmful or Helpful?

Deborah B. Whitman

Genetically-modified foods (GM foods) have made a big splash in the news lately. European environmental organizations and public interest groups have been actively protesting against GM foods for months, and recent controversial studies about the effects of genetically-modified corn pollen on monarch butterfly caterpillars\(^1\) have brought the issue of genetic engineering to the forefront of the public consciousness in the U.S. In response to the upswelling of public concern, the U.S. Food and Drug Administration (FDA) held three open meetings in Chicago, Washington, D.C., and Oakland, California to solicit public opinions and begin the process of establishing a new regulatory procedure for government approval of GM foods.\(^2\) I attended the FDA meeting held in November 1999 in Washington, D.C., and here I will attempt to summarize the issues involved and explain the U.S. government's present role in regulating GM food.

What are genetically-modified foods?

Annotating Strategy- use highlighter or other strategy to identify
- Pros
- Cons

Alone Zone- 7 minutes
Claim: A statement that expresses the answer or conclusion to a question or problem.

Evidence: Scientific data that supports the claim.

Reasoning: Provides a justification that links the evidence to the claim and explains why the evidence supports the claim using scientific principles.

(Rebuttal): Recognizes and describes alternative explanations and provides counter evidence and reasoning for why the explanation is not appropriate.
# Variations of C-E-R

<table>
<thead>
<tr>
<th>Variation</th>
<th>Grade Level</th>
<th>Description</th>
</tr>
</thead>
</table>
| Variation 1 | K-2 (perhaps completed verbally) | 1. Claim  
2. Evidence |
| Variation 2 | K-2, 3-5          | 1. Claim  
2. Evidence  
• Multiple Pieces |
| Variation 3 | 3-5, 6-8          | 1. Claim  
2. Evidence  
• Multiple Pieces  
3. Reasoning |
| Variation 4 | 6-8, 9-12         | 1. Claim  
2. Evidence  
• Multiple Pieces  
3. Reasoning  
4. Rebuttal |

Table adapted from *What’s Your Evidence* pg. 119
Develop an Initial C-E-R Graphic Organizer

Claim-Evidence-Reasoning (CER) Model: GMOs - Helpful or Harmful

Name ___________________________ Date ___________ Period ___________

I. Claim (50%):
- Claim #1: GMOs are mostly harmful.
- Claim #2: GMOs are mostly helpful.
- Claim #3: GMOs can be either harmful or helpful.
- Claim #4: More research is needed.

II. Evidence (from your data) (40%):
Choose at least four (4) observations from the data "box" in support of your chosen claim (1, 2, 3, or 4).

III. Reasoning (connect your evidence to the claim) (10%):
Explain, with your three (3) best evidences, your reasoning (why you chose claim 1, 2, 3, or 4). Follow the format shown here: As is matter (claim), we found that the weight of the ball increases each time we pumped air into it (evidence). This shows that air has weight, one of the characteristics of matter (reasoning).

CER Question: GMOs - Helpful or Harmful?

1. Gather Data: Please describe at least a total of ten (10) of the most compelling main ideas/supporting evidence from your research/article.

<table>
<thead>
<tr>
<th>Pros (5%)</th>
<th>Cons (5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1.</td>
</tr>
</tbody>
</table>

2. Claim (highlight only):
- Claim #1: GMOs are mostly harmful.
- Claim #2: GMOs are mostly helpful.
- Claim #3: GMOs can be either harmful or helpful.
- Claim #4: More research is needed.

3. Evidence (from your data): Choose at least four (4) pieces of evidence from the data "box" in support of your chosen claim (1, 2, 3, or 4).

<table>
<thead>
<tr>
<th>1.</th>
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</table>

4. Reasoning (connect your 3 best pieces of evidence to the claim): Construct an argument from evidence that supports the claim you chose (1, 2, 3, or 4) using at least three pieces of evidence and reasoning that explains why each piece of evidence supports the claim using scientific ideas or principles. Click here for scaffold and sentence starters.
Develop a Rebuttal

### Rebuttal

- Create another C-E-R but for an alternative or counter-claim
- What would the opposing side argue?

<table>
<thead>
<tr>
<th>Component</th>
<th>Level</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Claim</strong></td>
<td>0</td>
<td>Does not make a claim, or makes an inaccurate claim.</td>
<td>Makes an accurate but incomplete claim.</td>
<td>Makes an accurate and complete claim.</td>
</tr>
<tr>
<td><strong>Evidence</strong></td>
<td>0</td>
<td>Does not provide evidence, or only provides inappropriate evidence that does not support claim.</td>
<td>Provides appropriate, but insufficient evidence to support claim. May include some inappropriate evidence.</td>
<td>Provides appropriate and sufficient evidence to support claim.</td>
</tr>
<tr>
<td><strong>Reasoning</strong></td>
<td>0</td>
<td>Does not provide reasoning, or only provides reasoning that does not link evidence to the claim.</td>
<td>Provides reasoning that links the claim and evidence. Repeats the evidence and/or includes some scientific principles, but not sufficient.</td>
<td>Provides reasoning that links evidence to claim. Includes appropriate and sufficient scientific principles.</td>
</tr>
<tr>
<td><strong>Rebuttal</strong></td>
<td>0</td>
<td>Does not recognize that an alternative explanation exists and does not provide a rebuttal or makes an inaccurate rebuttal.</td>
<td>Recognizes alternative explanations and provides appropriate but insufficient counter evidence and reasoning in making a rebuttal.</td>
<td>Recognizes alternative explanations and provides appropriate and sufficient counter evidence and reasoning when making rebuttals.</td>
</tr>
</tbody>
</table>
# Rubrics for CER

## Claims, Evidence and Reasoning Rubric

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 4 Complete and correct</strong></td>
<td>The student’s claim is clear and relevant. The student’s evidence supports the claim, is accurate and sufficient, and student evaluates the strength of the evidence in supporting the claim. The student’s reasoning is appropriate, logically connected to the claim, and sufficient.</td>
</tr>
<tr>
<td><strong>Level 3 Almost there</strong></td>
<td>The student’s claim is relevant but incomplete. The student’s evidence is relevant, accurate, and sufficient. The student’s reasoning is appropriate and logically connected to the claim, BUT is not sufficient.</td>
</tr>
<tr>
<td><strong>Level 2 On the way</strong></td>
<td>The student’s claim seems relevant but is unclear. The student’s evidence is relevant BUT is incomplete or contains inaccuracies. The student’s reasoning is scientific BUT is incomplete or not logically connected to the claim.</td>
</tr>
<tr>
<td><strong>Level 1 Getting started</strong></td>
<td>The student provided an irrelevant claim. The student’s evidence is irrelevant or does not support the claim. The student’s reasoning is nonscientific, does not logically support the claim, or does not connect the claim to the evidence.</td>
</tr>
<tr>
<td><strong>Level 0</strong></td>
<td>The student provided no claim. The student provided no evidence. The student provided no reasoning.</td>
</tr>
<tr>
<td><strong>x</strong></td>
<td>The student had no opportunity to respond. The student had no opportunity to respond.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>N/A</th>
<th>Beginning</th>
<th>Approaching</th>
<th>Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Claim</strong></td>
<td></td>
<td>Does not make a claim.</td>
<td>Makes an inaccurate claim.</td>
<td>Makes an accurate, but incomplete claim.</td>
</tr>
<tr>
<td><strong>Evidence</strong></td>
<td></td>
<td>Does not provide evidence.</td>
<td>Evidence is inappropriate or it does not support the claim.</td>
<td>Provides appropriate, but insufficient evidence. May include some inappropriate evidence.</td>
</tr>
<tr>
<td><strong>Reasoning</strong></td>
<td></td>
<td>Does not include reasoning.</td>
<td>Reasoning is not appropriate or does not link the claim to the evidence.</td>
<td>Provides reasoning that links claims to evidence. Repels evidence and/or includes some scientific principles, but not sufficient.</td>
</tr>
</tbody>
</table>

Arguing from Evidence is **More than C-E-R Writing** - Try a Card Sort!

**Surface of Mars Before and After**

![Image of Mars surface before and after a rover's movement]

**Setup: Object on Mars Claim and Evidence Cards**

**Question:** What is this object that the *Opportunity* rover photographed on the surface of Mars and how did it get there?

**Claim:** The jelly doughnut object found on Mars is a rock that was moved by the Mars' rover *Opportunity*.

- **relevant evidence**
- **irrelevant evidence**

**Argumentation Sentence Starters for Partner Discussion**

- I think this piece of evidence supports this claim because ....
- I don’t think this piece of evidence supports this claim because ....
- I agree because ....
- I disagree because ....
- Why do you think that?
**Different Claims**

**Group Work With Different Claims**

- Goal is to create a situation where students in a group have different claims, which encourages them to question and critique each other’s claims.

**Example Approach:**

- **Argument Jigsaw:** 2 pairs of students converge to agree on a single explanation or model.
Science Seminar

Science Seminar Roles

Class Arrangement:
- Half the class sits in the inner circle
- The other half of the class sits in the outer circle.

The Argumentation Toolkit

Borrowed from Katherine McNeill's NSTA Presentation: Beyond CER
How to Successfully Begin to Engage Students in Arguing from Evidence

- Scaffolds
- Graphic Organizers
- Discussion Sentence Starters
- Writing Sentence Starters
- Time and Modeling!

<table>
<thead>
<tr>
<th>Component</th>
<th>Sentence Starters (choose one per component)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claim (highlight one)</td>
<td>• Claim #1: GMOs are mostly harmful.</td>
</tr>
<tr>
<td></td>
<td>• Claim #2: GMOs can be either harmful or helpful.</td>
</tr>
<tr>
<td></td>
<td>• Claim #3: GMOs are mostly helpful.</td>
</tr>
<tr>
<td></td>
<td>• Claim #4: More research is needed.</td>
</tr>
<tr>
<td>Evidence #1</td>
<td>• From the _______ article, evidence to support my claim is _______.</td>
</tr>
<tr>
<td></td>
<td>• According to the article, _____________</td>
</tr>
<tr>
<td></td>
<td>• The first piece of evidence is _______</td>
</tr>
<tr>
<td></td>
<td>• One piece of evidence to support my claim is _______ from the _______ article.</td>
</tr>
<tr>
<td>Reasoning #1</td>
<td>• This is important because _______.</td>
</tr>
<tr>
<td></td>
<td>• This shows that _______.</td>
</tr>
<tr>
<td></td>
<td>• This proves that _______.</td>
</tr>
<tr>
<td></td>
<td>• This supports my claim because _______.</td>
</tr>
<tr>
<td></td>
<td>• This evidence suggests that _______, which means _______.</td>
</tr>
<tr>
<td>Evidence #2</td>
<td>• Another piece of evidence from the _______ article is _______.</td>
</tr>
<tr>
<td></td>
<td>• Additionally, _______.</td>
</tr>
<tr>
<td></td>
<td>• The second piece of evidence is _______.</td>
</tr>
<tr>
<td>Reasoning #2</td>
<td>• This is important because _______.</td>
</tr>
<tr>
<td></td>
<td>• This shows that _______.</td>
</tr>
<tr>
<td></td>
<td>• This proves that _______.</td>
</tr>
<tr>
<td></td>
<td>• This supports my claim because _______.</td>
</tr>
<tr>
<td></td>
<td>• This evidence suggests that _______, which means _______.</td>
</tr>
<tr>
<td>Evidence #3</td>
<td>• Another piece of evidence from the _______ article is _______.</td>
</tr>
<tr>
<td></td>
<td>• Additionally, _______.</td>
</tr>
<tr>
<td></td>
<td>• The final (or third) piece of evidence is _______.</td>
</tr>
<tr>
<td>Reasoning #3</td>
<td>• This is important because _______.</td>
</tr>
<tr>
<td></td>
<td>• This shows that _______.</td>
</tr>
<tr>
<td></td>
<td>• This proves that _______.</td>
</tr>
<tr>
<td></td>
<td>• This supports my claim because _______.</td>
</tr>
<tr>
<td></td>
<td>• This evidence suggests that _______, which means _______.</td>
</tr>
<tr>
<td>Conclusion</td>
<td>• In conclusion, _______.</td>
</tr>
<tr>
<td></td>
<td>• In sum, _______.</td>
</tr>
<tr>
<td></td>
<td>• Therefore, _______.</td>
</tr>
</tbody>
</table>
Thank you for sharing this space!
Please contact us for support!

Rebecca Garelli
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Rebecca.Garelli@azed.gov

Sarah Sleasman
Science & STEM Director
Sarah.Sleasman@azed.gov