Science in the News: Part 2
Applying Source & Evidence Evaluations

Applying Evidence-Based Reasoning

Think about:

- How do students apply claims based reasoning beyond the classroom?
- Why is this important?

Applying What Students Learn...

- A transfer task is necessary to determine if students can:
  - Transfer the skills acquired from Lateral Reading, MELs, and baMELs to science phenomenon and claims made in real-world scenarios
  - Identify models and evidence in science articles
  - Based on the evidence presented, evaluate the plausibility of the model

Waterfall…

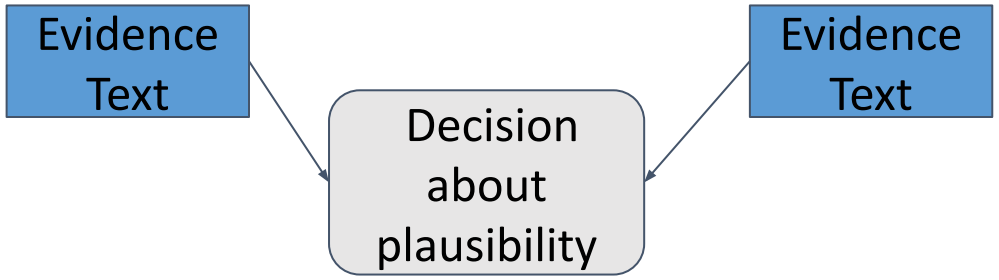
What are <u>similarities</u> in the LR and MEL activities in how students weigh how strongly evidence supports claim(s) or model(s)?

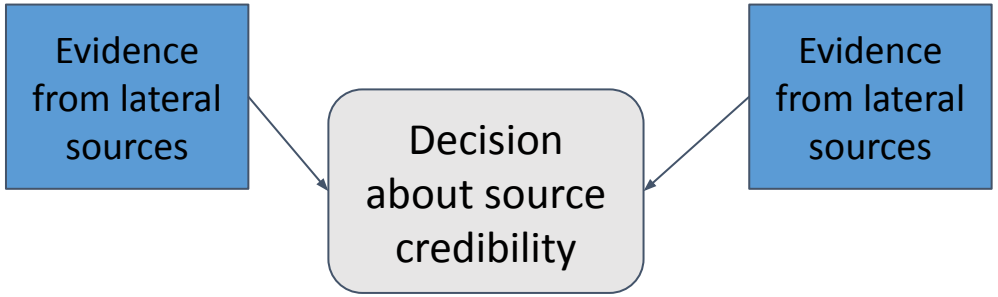
➔ Claims about how credible a source is (LR)

➔ Claims about the plausibility of scientific models (MEL)

Learning Evidence-Based Reasoning

Considering how strongly evidence from credible sources supports a claim/model and discussing those ideas with others





Directions: 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 it is wrong)
- The evidence has **nothing to do with** the model

Evidence #1
Wetlands play a role in the global cycles of carbon, nitrogen, and sulfur. Wetlands change these nutrients into different forms necessary to continue their global cycles.

Model A
Wetlands provide ecosystem services that contribute to human welfare and help sustain the biosphere.

Evidence #3
Wetlands contribute 70 percent of global atmospheric methane from natural sources.

Evidence #2
Flooding is a natural occurrence in low-lying areas and wetlands are places where floodwaters can collect.

Model B
Wetlands are a nuisance to humans and provide little overall environmental benefit.

Evidence #4
Many wetlands are located in rapidly developing areas of the country.

Details about the source that **make it more credible**	Details about the source that **make it less credible**
Details about the source that **we're not sure** help or hurt its credibility	

Learning Evidence-Based Reasoning

Can students apply this kind of evidence-based reasoning with new science concepts & articles?

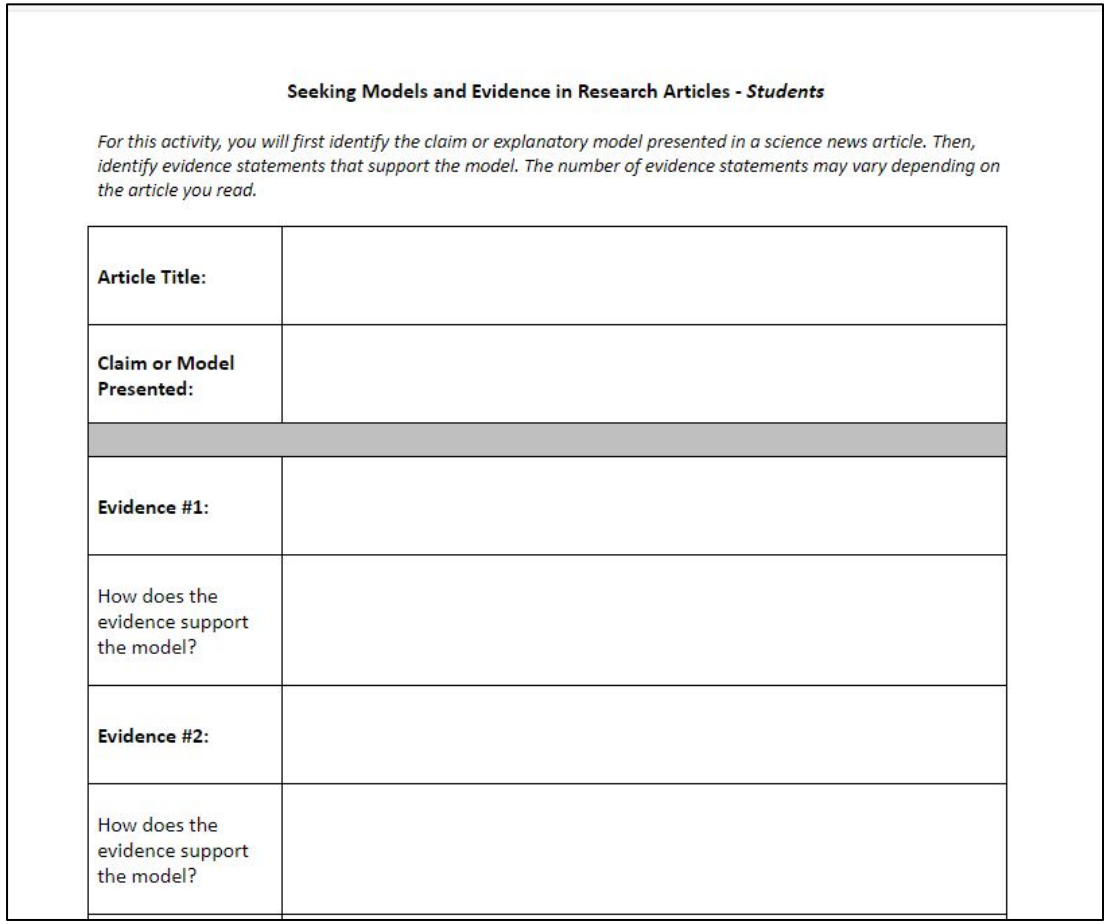
Can students apply this reasoning in a combined LR-MEL activity?

Revisiting the “Science in the News” task!

Revisiting Science in News Task - paper

Steps:

1. Lateral reading to find a credible article to read
2. Identify author's model (claim)
3. Find evidence presented that supports the claim
4. Explain how each line of evidence connects to the model
5. Assess plausibility of the model



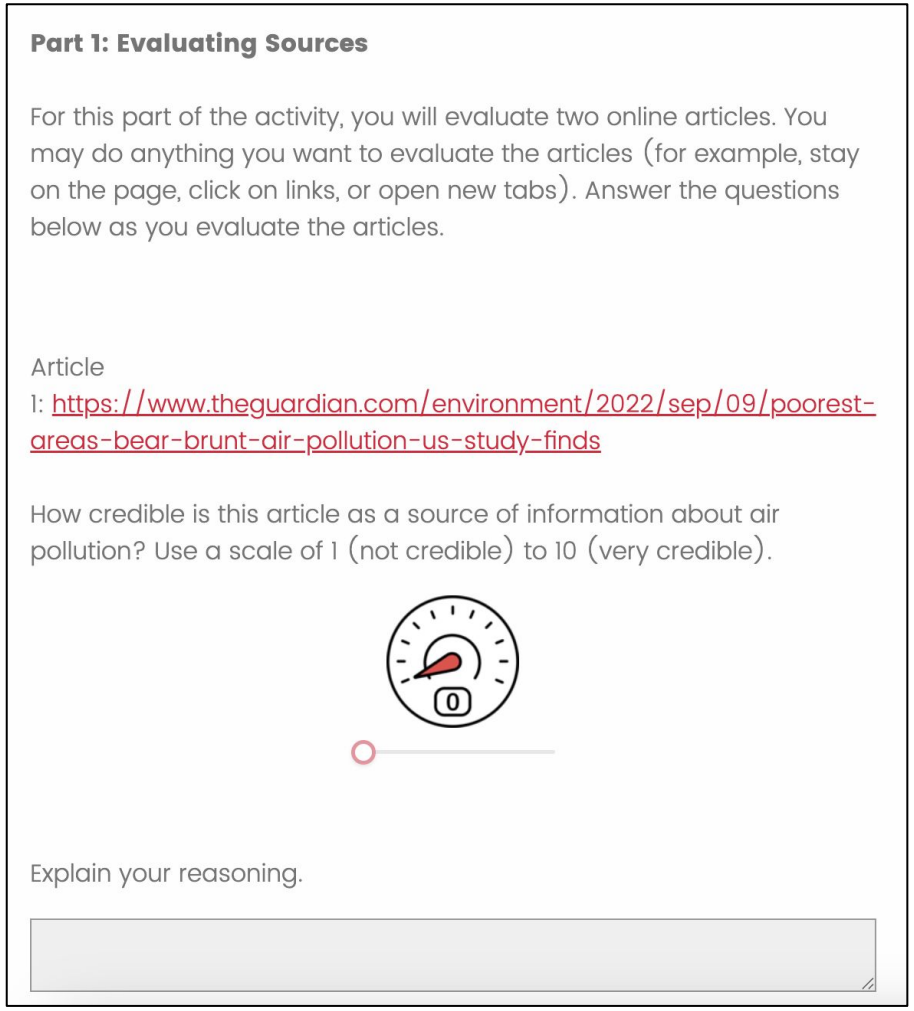
Seeking Models and Evidence in Research Articles - *Students*

For this activity, you will first identify the claim or explanatory model presented in a science news article. Then, identify evidence statements that support the model. The number of evidence statements may vary depending on the article you read.

Article Title:	
Claim or Model Presented:	
Evidence #1:	
How does the evidence support the model?	
Evidence #2:	
How does the evidence support the model?	

Revisiting Science in News Task - digital

1. Read laterally to identify a credible article to read
2. Identify author's model (claim) and evidence presented that supports the claim
3. Assess plausibility of the model



Part 1: Evaluating Sources

For this part of the activity, you will evaluate two online articles. You may do anything you want to evaluate the articles (for example, stay on the page, click on links, or open new tabs). Answer the questions below as you evaluate the articles.

Article 1: https://www.theguardian.com/environment/2022/sep/09/poorest-areas-bear-brunt-air-pollution-us-study-finds

How credible is this article as a source of information about air pollution? Use a scale of 1 (not credible) to 10 (very credible).

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Explain your reasoning.

Let’s try!

https://tinyurl.com/sciencenewstask

(15 min)

Discussing the Task….

In Breakout Rooms: (10 min)

1. How did you assess the credibility of each article and what did you decide to read?
2. How did the plausibility evaluation classification (Question 1) vary among your group members?
3. What were the key lines of evidence presented?
4. How well did each line of evidence support the models individually and when coupled with the other lines of evidence?

Whole Group Discussion

- Which article was more credible and why?
- What claims were presented in the article you selected?
- What lines of evidence did you identify?
- Did you identify additional lines of evidence after your group discussions?
- How did your discussion with your group help your understanding of the content of the article?
- Were there any alternative models presented in this article? If so, how did you rate them? Why?
- How did you evaluate the plausibility of the model presented?

Teacher Reflection

Review student work and consider the following questions when assessing their responses.

- How do your students evaluate models when presented with evidence? In what ways might you modify this activity to help students think more critically about models and evidence?
- What did students do differently when evaluating articles compared to the MEL task? What similarities?
- What are some of the challenges for students in evaluating evidence to model connections?
- How do students consider alternative models in relationship to the model at the focus of the article?

Wrap Up

- Take a minute to look over the Teacher Guide for the “Science in the News” Task
- Compare and Contrast the Task and LR-MEL/baMEL
- How do you expect your students to respond?
- How else could you use this task, or something similar to assess students abilities to determine the plausibility of models based on the evidence provided?

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