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Scientific and Information Literacy in Online Discussion Forums

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Scientific and Information Literacy in Online Discussion Forums



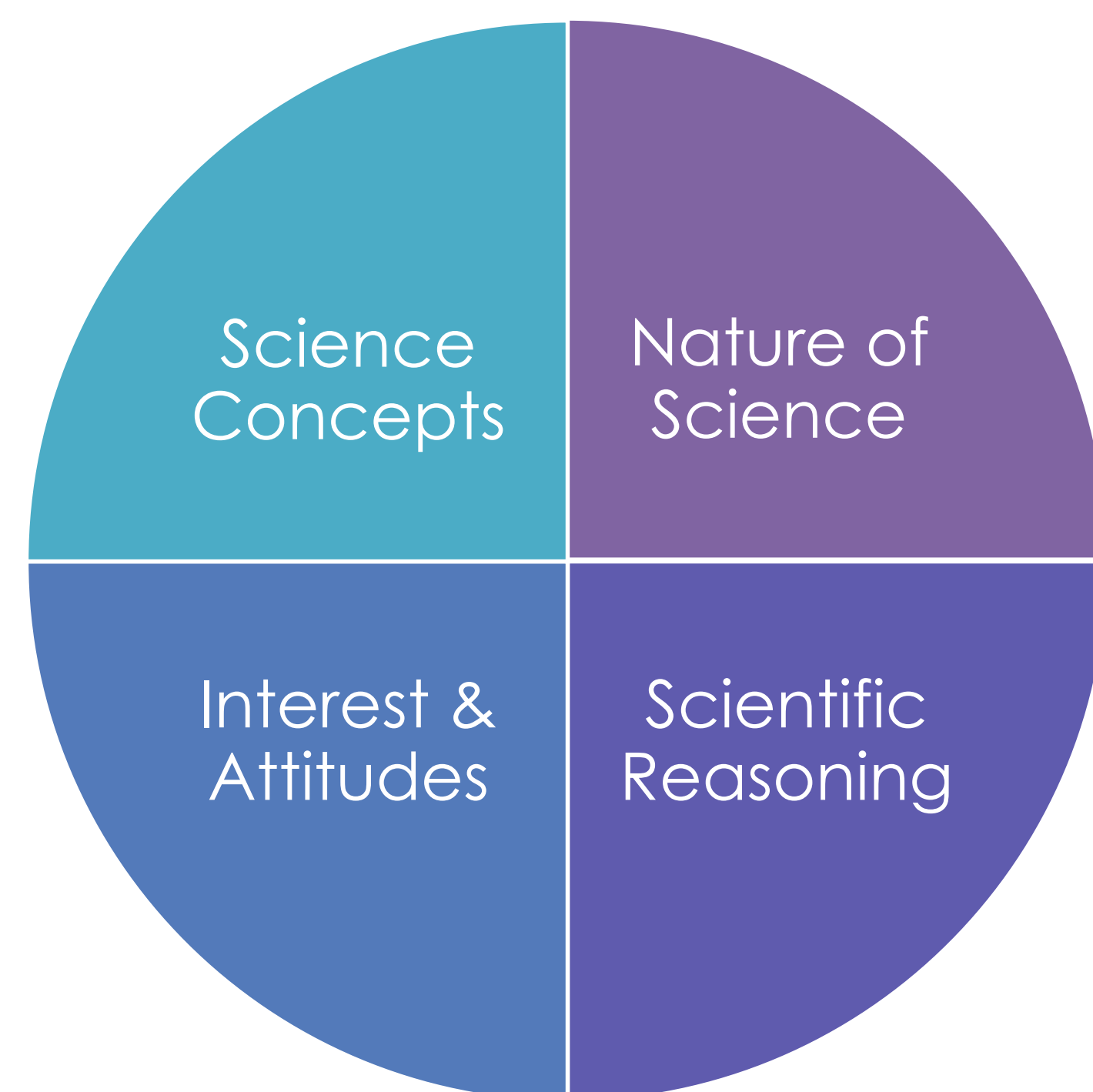
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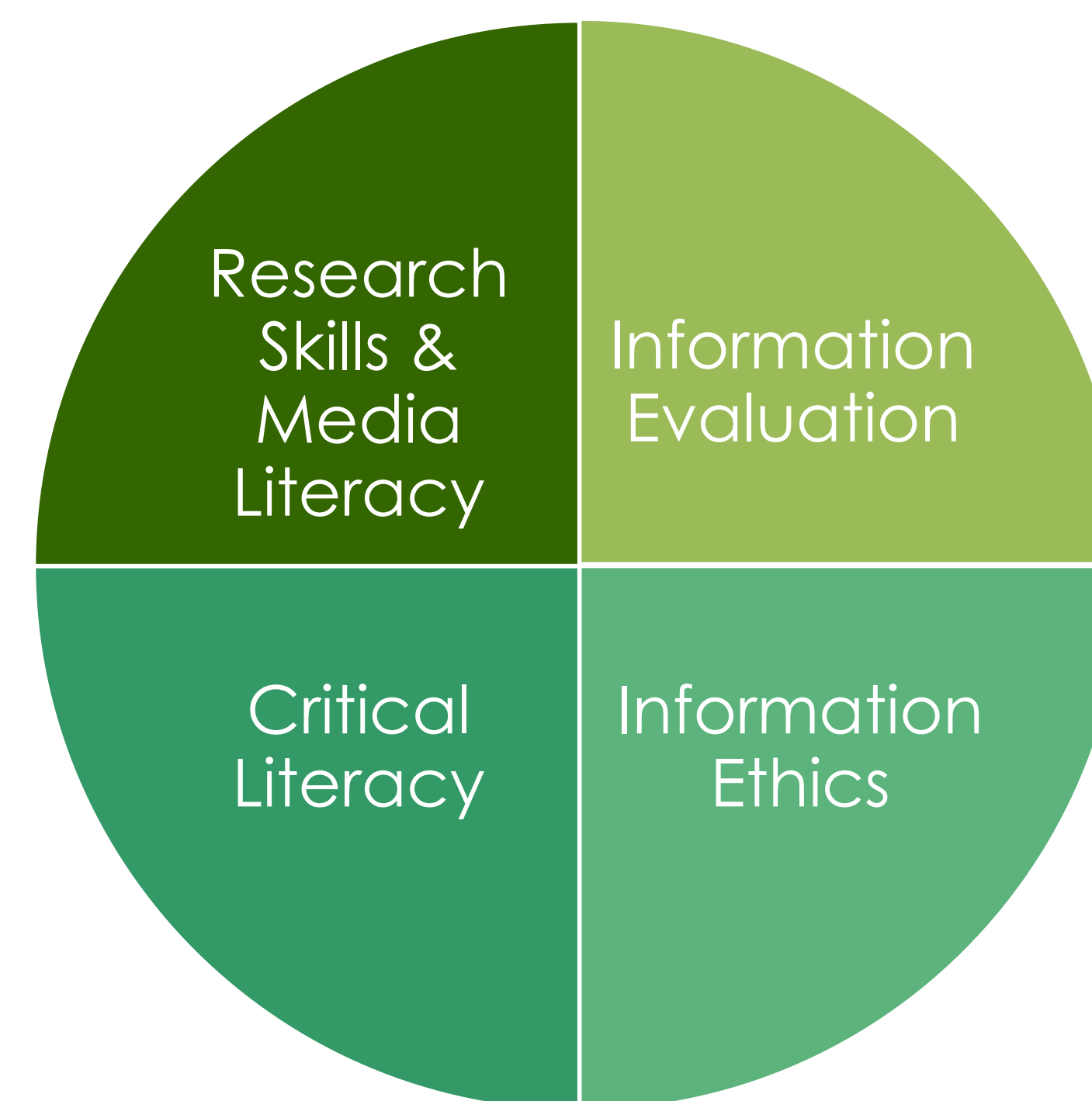
Scientific Literacy

- identify a valid scientific argument
- analyze scientific evidence including graphical representations of data
- use mathematical information, and critical thinking in decision-making processes



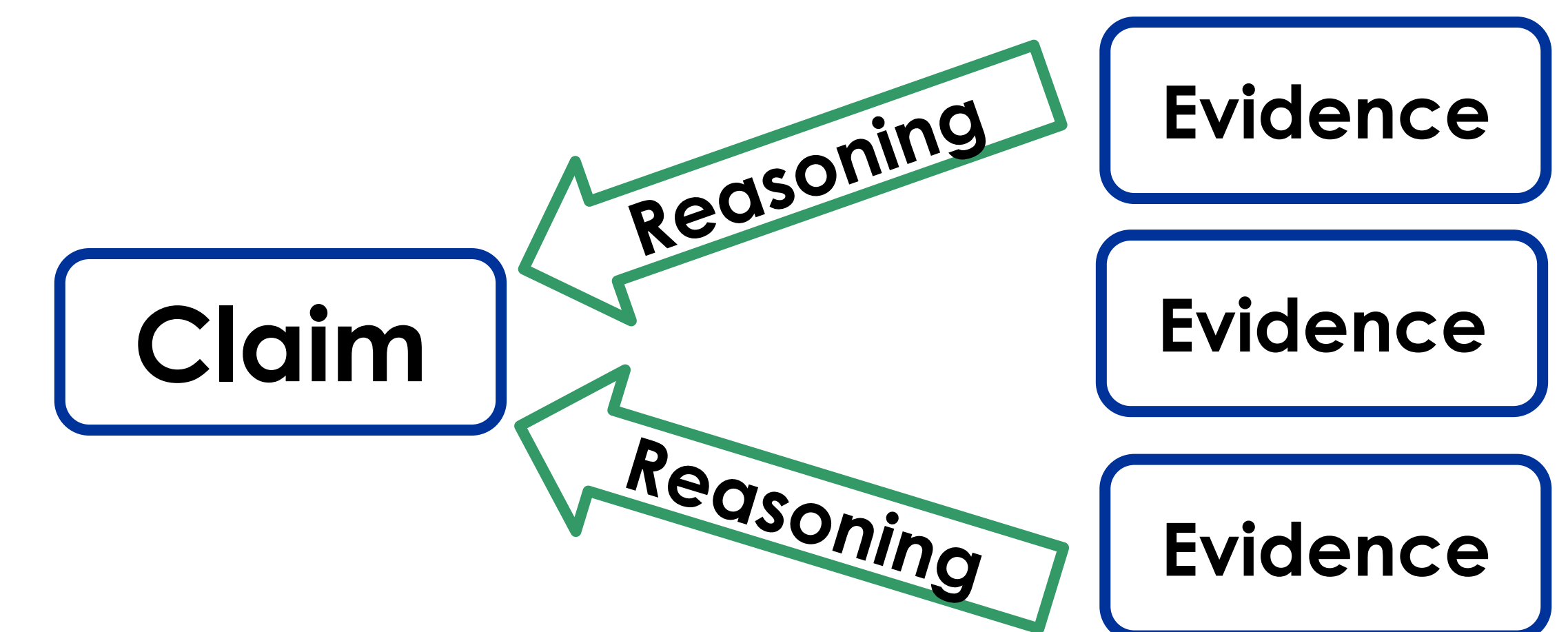
Information Literacy

- conduct research using 1° and 2° sources
- synthesize source material effectively
- report information accurately and ethically
- Evaluate sources for credibility, authority, accuracy, relevance, and currency



Scientific Arguments

1. Uses multiple pieces of appropriate evidence
2. Assumptions and inferences are explained
2. Contains only true claims
3. Conclusions follow from claims
4. No logical fallacies
5. Biases are checked (e.g. confirmation bias, halo effect)



Literacies in Action

Design

- Task: Craft an evidence-based opinion on controversial issue
- Rubric with line items for literacies and scientific arguments

Which should be a priority for conservation – biodiversity hotspots or cold spots?

Do we have a human population problem?

What should the role of government be in regulating greenhouse gases?

Do plastic product bans work?

Facilitation

Emily Faulconer
Jan 7, 2019
Strong evidence-based argument. I found this [research article](#) recently published on the topic. How might you include this information into your argument?
[View in discussion](#)

Emily Faulconer
Jan 18, 2019
There is no "enough" to prove a theory. One of the basic tenets of the nature of science is that we can never be 100% certain because we're always working with incomplete information. Data either supports a hypothesis or not. From a statistical perspective, notice the language used in hypothesis testing. The only two options are to 1) reject the null or 2) fail to reject the null. Notice you fail to reject. You do not prove it true.
Edited by Emily Faulconer on Jan 18 at 6:48am
[View in discussion](#)

Emily Faulconer
Jan 24, 2019
You found some great data! If you were going to explain the key points from your paragraph to a non-expert, how would you phrase it?
[View in discussion](#)

Emily Faulconer
Jan 16, 2019
Do we ever prove a hypothesis? But fair point about not having much to compare the Earth to.
[View in discussion](#)

Emily Faulconer
Jan 15, 2019
I like the intent of the decodedscience.org website. However, this is expert commentary on scientific topics. How does this fact weigh in your evaluation of the content from the website?
[View in discussion](#)

Emily Faulconer
Jan 23, 2019
What is some evidence to support your statement "If we focus on a biodiversity coldspot then the biodiversity hotspot could easily become a coldspot"? And how would you respond to a rebuttal of the flip argument, that focusing on biodiversity hotspots could easily cause biodiversity cold spots to become irreparably damaged?
Are ecosystem services (including biodiversity) from hotspots more valuable?
[View in discussion](#)

Emily Faulconer
Jan 22, 2019
Can you find additional sources to synthesize into your argument? How did you weigh this against conserving coldspots to arrive at the decision that conserving hotspots was ideal? Explaining this in your argument will make your argument stronger as you acknowledge alternative perspectives and justify your decision.
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