



VIEW TEACHING GUIDES

12. CRITICAL THINKING AND LOGICAL REASONING

If your students are learning about making connections between complex and contradicting pieces of information to draw logical conclusions, refer to:

- Why Thinking Matters
- Introduction to Analysis
- Synthesis
- Inquiry
- Importance of Logical Reasoning

DISCUSSION TOPICS

Logical Reasoning

Logical reasoning is central to effective problem solving and decision making. Use this discussion to help students identify instances of logical and illogical reasoning they may encounter in their daily lives. Begin by asking students to brainstorm examples of logical arguments. Next, ask students to identify arguments that are based on illogical reasoning. Use the following prompts to encourage analysis:

- Why are logical arguments more credible than those based on illogical reasoning?
- What factors comprise a person's ability to reason logically?
- How do you use logic to make everyday decisions?

Why Thinking Matters

Being aware of the critical thinking process will help students develop strong decision making skills. To help them tune in to their critical thinking mindset, first ask students to describe a time in their professional or academic life in which they made a decision without thinking critically. What was the problem that needed solving? What did they do? What would they have done differently had they stopped to think about their course of action?

In the following week, students will keep a log of instances in which critical thinking helped them solve a complex problem. Ask your students to discuss their experience and findings in small groups or as a class.

Analysis

Help students understand that they use analytical skills on a regular basis by asking them to describe a time they encountered contradicting perspectives on a particular issue. Students should be able to discuss the issue at hand (maybe contrasting academic sources, inconsistencies in misleading news reports, or two articles citing different results from a case study), how they examined the conflicting points of view, and how they arrived at a logical conclusion.

ACTIVITIES

Critical Thinking

Divide students into small groups and assign each a scenario. Ask students to write a concise problem statement to articulate the issue at hand. Next, students will write down their answers to these follow-up questions:

- What do you already know about the issue?
- What was your emotional response to the situation?
- What additional information will you need to fully consider the situation?
- What questions would you ask to further analyze the situation?

Using real world scenarios will help students see the value of critical thinking when making decisions in their personal, academic, or professional life. Scenarios could include:

- *You decide to write a complaint to the city planning department after witnessing the removal of trees in your neighborhood.*
- *You want to quit your job and take a gap year before beginning a graduate program, but you need to save money to pay for tuition.*
- *During your last year of college, a family friend offers to sell you their house located a short distance from campus. You have already made several professional contacts in the area, but are open to relocating for the right job.*

Analyzing Information

This activity will help students practice two essential research skills: organizing their work and analyzing the relationship between sources. Select a topic that your students are unfamiliar with, and ask them to locate 5 or 6 sources about the topic in a variety of formats (ebooks, journal article, podcast, blog post, etc.). For each source, they should find the title, author, source, publication date, format, and keywords. Students should type the information into a single document and print it out. Distribute copies to pairs of students and ask them to cut out each source. Prompt students to arrange their sources chronologically or thematically. Next, students will order the sources according to importance and justify their ranking.

For a more challenging activity, ask students to arrange the sources in order of relevance to a research question.

Practicing Inquiry

To encourage your students to develop an inquiry-based mindset, begin with a scenario such as: *You are considering buying a new car. While a car that runs on gas is more affordable, an electric car would help reduce emissions. Use an inquiry-based approach to decide which type of car you should purchase.* You may want to present them with a scenario that relates specifically to the discipline of the course you're teaching or to your students' prospective career choices.

Instruct students to create a list of questions they would ask in order to gain a deeper understanding of the issue at hand. Students should be able to revise questions to develop an exploratory outlook and observe connections. Additionally, students should be able to identify at least 3 sources that would help them make the most informed decision.

Identifying Logical Reasoning

For this activity, you will need access to a recorded interview, discussion, or debate. Play the recording for your students to familiarize them with the topic and the speakers. Next, ask your students to watch or listen to the recording again to identify how the speakers use logic to advance their arguments. Students should be able to describe how the speakers use (or misuse) logic to form rebuttals and conclusions.