



High School

National FFA Organization

Lesson HS.25

APPLYING CRITICAL THINKING

Unit. Stage One of Development—ME

Problem Area. How Do I Begin to Grow?

Precepts. J1: Think critically.

National Standards. NS.9-12.1 — Science as Inquiry — Develop understanding of scientific inquiry.



Student Learning Objectives. As a result of this lesson, the student will ...

- 1 Develop a critical thinking strategy.
- 2 Describe the attitudes (dispositions) which allow the demonstration of critical thinking.



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Time. Instruction time for this lesson: 50 minutes.



Resources

Hughes, William. *Critical Thinking: An Introduction to the Basic Skills*. Boston, Massachusetts. Broadview Press, 2000.

The National Council for Agricultural Education. *Animal Welfare Instructional Materials*. 1995.

National FFA Organization's Essential Learnings materials, 2003.

Ruggiero, Vincent Ryan. *Becoming a Critical Thinker*. Boston, Massachusetts. Houghton Mifflin Company, 2002.

Webster's Universal College Dictionary. New York, New York. Random House Inc., 1997.



Tools, Equipment, and Supplies

- ✓ Writing surface
- ✓ Transparencies
- ✓ Overhead projector
- ✓ Assortment of markers
- ✓ Copies of HS.25.Assess—one per student
- ✓ Copies of HS.25.AS.A—one per student
- ✓ Index cards



Key Terms. The following terms are presented in this lesson and appear in bold italics:

- ▶ Argument
- ▶ Evidence
- ▶ Persuasion
- ▶ Topic sentence
- ▶ Reason
- ▶ Valid
- ▶ Variable



Interest Approach



Let's begin! Today, we need to be critical thinkers as we further develop our critical thinking skills. We remember that critical thinking is personal, purposive, and reflective thinking used to solve problems, make decisions and clarify concepts. Let's review from what we previously learned about critical thinking.

Return index cards from Lesson HS.24 to students and use a Show What You Know Moment to review previous learned knowledge. Pose the following question to the students.



 What are some times in our everyday life when we use critical thinking skills?

Possible answers may include reading the newspaper, watching television, solving problems at work or at school, buying a product, writing a research paper, preparing a speech, etc.

 Why is critical thinking so important?

Possible answers include to make good decisions, to ensure the credibility of information, or to know the truth.

 Great answers! Since critical thinking is such a huge part of our everyday life, wouldn't it be great if we had a strategy to become better critical thinkers.

SUMMARY OF CONTENT AND TEACHING STRATEGIES

Objective 1. Develop a critical thinking strategy.

For this part of the lesson, we need you to have an open mind. Great critical thinkers have a process to think critically, whether they are aware of it or not. We are going to look at the four steps used to think critically throughout your life! Capture these four steps in your notebook.

Provide the following using a Go Get it Moment and HS.25.TM.A and HS.25.TM.B. Facilitate discussion for each strategy. For example, ask who can tell us what it takes to become a lifelong learner? After each strategy for critical thinking is explained by the student, make sure you clarify and reiterate important points.

I. Develop a critical thinking strategy.

A. Become a lifelong learner.

1. Keep an open mind. Be willing to accept new ideas. Observe the world around you knowing that something can be learned from this.
2. Read books, magazines, newspapers, and Internet articles. Spend time each day keeping up with local news and world events. Read the editorials and opinions sections and search for the issues. Understand why these people feel so strongly about the specific issues.
3. Watch television and listen to the radio. Use these forms of media to get in touch with other ideas and cultures. Ask yourself why these ideas and cultures are different. Look for reflections of our society and other societies in movies, commercials, and music. Your first impression may not be accurate.
4. Talk to experts in different fields of interest. Listen to these people carefully to get a general idea of what they do in life. Look for similarities between them and you to relate in conversation. Keep in contact with them for later reference and to improve your personal relationships.
5. Keep a journal of observations. Daily, write down everything that interests you or jumps out at you. Review everything at the end of the day to get a better understanding. Things to write down include information about what you have read, news for the day, activities done during the day, conversations, and anything else that interests you.



B. Locate the main point or problem.

1. Scan reading material for a topic sentence or summary. A topic sentence or summary will quickly lead you to the main point of written material. Discover the objective of the writer and identify the problem. Ask yourself if the writer has **valid** statements or has other points that need to be discussed.

2. Topic sentence: a sentence that expresses the essential idea of a paragraph or larger section, usually appearing at the beginning.

3. Look for the focus of the discussion. Ask yourself what is being discussed and why it is being discussed. Is there more than one issue? Remove body language and emotion to discover the real problem or point. Find out what is trying to be persuaded.

C. Question the statements.

1. Understand the reason behind the argument. Find out what the people behind the argument have at stake. Identify if there is persuasion in the statement. Establish the importance of the issue. Look at the larger picture to decide the relevance of this argument compared to other arguments.

2. **Argument** a statement or reason offered as proof of evidence.

3. **Persuasion** to cause a person to do some thing by advising or urging.

4. Evaluate the evidence. Determine if the evidence is credible and relevant. Discover if the data for the evidence is recent or expired. Verify if the evidence was interpreted correctly, or if there are other variables in the evidence.

5. **Evidence**: data that tends to prove or disprove something.

6. **Variable**: something inconsistent or alterable.

D. Test the statements with reason, previous knowledge, and research.

1. **Reason**: sound judgment; good sense.

2. Find out if the statements that were made agree with what you can consider or with what you know. Use resources such as books, articles, people, and the Internet to uncover the facts. Ask yourself if you are comfortable believing the statement. Why or why not?

Use a Picasso Moment to engage student learning and check for understanding.



Excellent! Your critical thinking artwork is amazing. Now that we have a strategy, let's start thinking about certain attitudes we need to possess in order to demonstrate critical thinking.

Objective 2. Describe the critical thinking dispositions which allow the demonstration of critical thinking.



If we are going to demonstrate critical thinking we have to continuously exhibit some attitudes or dispositions of great critical thinkers. At this moment, we have the opportunity to be critical thinkers! Let's be master thinkers as we flex our critical thinking muscle.

II. Describe the dispositions which allow the demonstration of critical thinking.

A. Engagement

1. Looking for opportunities to use reasoning

2. Anticipating situations that require reasoning

3. Confident in reasoning ability

B. Maturity

1. Aware that real problems are complex

2. Open to other points of view

3. Aware of biases and predispositions

C. Innovativeness

1. Intellectually curious

2. Wants to know the truth

Hand out the Critical Thinking Disposition Assessment.



Hand out HS.25.AS.A. Guide students through the worksheet. Give students seven minutes to finish the activity sheet. Encourage group discussion concerning each statement.



Take 5 minutes and quietly complete the survey by indicating how much you agree with each statement by circling the appropriate number from one to five. One means you strongly disagree and five means you strongly agree.

After students have finished the survey, handout HS.25.AS.A and discuss each item on the survey. Encourage students to identify their strongest and weakest critical thinking dispositions.



Together, we have just studied how to develop a critical thinking strategy and even learned about our own attitudes and dispositions which all us to demonstrate critical thinking. Let's continue to demonstrate our critical thinking skills as we review this lesson. To finish this lesson we need to be thoughtful and creative.



Review/Summary

Use a Descartes Moment to engage student learning and check for understanding.

To sum it all up let's create a roadmap that indicates great critical thinking strategy. Be prepared to share your map. When I say go, begin creating your map. Go! After the majority of students have finished creating their map have random students explain how their roadmap demonstrates great critical thinning strategy.



It is obvious that our thinking is getting better. Let's challenge ourselves to take what we have learned about great critical thinking strategy and make a difference as leaders.



Application

►Extended Classroom Activity:

Have students go to an animal rights activist website to practice critical thinking skills.

►FFA Activity:

Have students think critically about the FFA mission statement. Does FFA make a positive difference in the lives of students by developing their potential for premier leadership, personal growth and career success through agricultural education?

►SAE Activity:

Have students think critically by proposing a new business plan for their SAE. Students can change an input such as a new feed, different fuel, different crop, or rent opposed to owning. Students can also change their output of their product or service such as adding a new service, add value to a product, or change the form of advertisement used. What are the benefits and disadvantages of the new business plan? Is the new plan better?



Evaluation

HS.25.Assess is provided to measure Objective 1 and 2.

Answers to Assessment:

1. A
2. B
3. D
4. Answers will vary with each student.



APPLYING CRITICAL THINKING

►Multiple Choice:

Circle the correct answer.

1. A lifelong learner
 - A. keeps an open mind.
 - B. is very old.
 - C. is a nerd.
 - D. all of the above.
2. The main point of an article can be found in
 - A. every paragraph.
 - B. the topic sentence.
 - C. the dictionary.
 - D. both a and b.
3. A person can test an argument with
 - A. reason.
 - B. previous knowledge.
 - C. research.
 - D. all of the above.

►Critical Thinking Skills

4. Directions: First, circle the main topic. Then circle if the statement is valid or invalid. Write why the information in the paragraph is valid or invalid below each paragraph. Rely on reason and previous knowledge of the subject for your answer.

The decision to eat meat, but to avoid veal, is a typical example of how knowledge (and sometimes lack of knowledge) affects our decision to eat or avoid certain food products.

Valid Invalid



Veal animals are usually male dairy calves. Female dairy calves are used as replacements for the dairy herd, but male dairy calves have no milking value to a dairy farmer. The breeding practice of using artificial insemination from select bulls makes the need of these male calves even less.

Valid Invalid

These dairy calves are usually raised in stalls where they sometimes receive dim lighting, limited exercise, and a diet low, but not deficient in iron, to give the meat a pink color. These practices promote the development of veal, a meat sometimes preferred by gourmet chefs and consumers. Male dairy calves only represent a profit when they are raised for veal, as they take longer to produce meat than beef cattle.

Valid Invalid

However, some people find it unacceptable to eat veal, due to the way veal calves are raised, being concerned with their physical and psychological well-being.

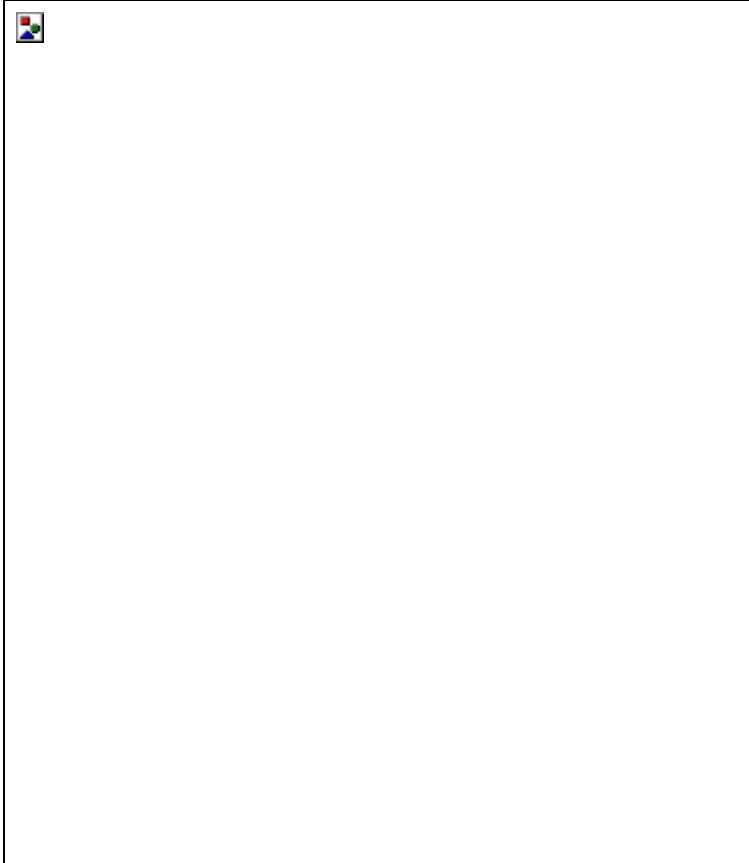
Valid Invalid



DEVELOP A CRITICAL THINKING STRATEGY

◆ Become a lifelong learner.

- ➔ Keep an open mind.
- ➔ Read books, magazines, newspapers, and Internet articles.
- ➔ Watch television and listen to the radio.
- ➔ Talk to experts in different fields of interest.
- ➔ Keep a journal of observations.

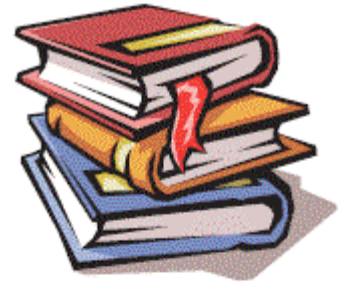


DEVELOP A CRITICAL THINKING STRATEGY (CONTINUED)

◆ Locate the main point or problem.

→ Scan reading material for a topic sentence or summary. Discover the objective of the writer and identify the problem. Ask yourself if the writer has valid statements or has other points that need to be discussed.

→ Look for the focus of the discussion.



◆ Question the statements.

→ Understand the reason behind the argument.

→ Evaluate the evidence.



◆ Test the statements with reason, previous knowledge, and research.

→ Find out if the statements that were made agree with what you can consider or with what you know.



After the completion of the survey, discuss each question in order with the students. Discuss how engagement, maturity, and innovativeness are essential for critical thinking. Use the critical thinking disposition descriptions below.

► **Engagement**

- Looking for opportunities to use reasoning
- Anticipating situations that require reasoning
- Confident in reasoning ability

► **Maturity**

- Aware that real problems are complex
- Open to other points of view
- Aware of biases and predispositions

► **Innovativeness**

- Intellectually curious
- Wants to know the truth



CRITICAL THINKING DISPOSITION ASSESSMENT

►Directions:

Indicate how much you agree or disagree with each numbered statement by circling the appropriate number. 1 = Strongly disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strongly agree.

	SD	D	U	A	SA
1. When someone disagrees with me I usually tune him or her out.	1	2	3	4	5
2. I look for opportunities to solve problems.	1	2	3	4	5
3. I am interested in many issues.	1	2	3	4	5
4. It is important for me to have a deep understanding of more than one issue.	1	2	3	4	5
5. I am able to relate to a wide variety of issues.	1	2	3	4	5
6. I ask lots of questions in a learning environment.	1	2	3	4	5
7. I enjoy finding answers to challenging questions.	1	2	3	4	5
8. I am a good problem solver.	1	2	3	4	5
9. I am confident that I can reach a reasonable conclusion.	1	2	3	4	5
10. It is important to be well informed.	1	2	3	4	5
11. I am not likely to change my values even when I am given new information that might conflict with them.	1	2	3	4	5
12. I enjoy solving problems.	1	2	3	4	5
13. I know I have biases and if other people can't accept that it is their problem.	1	2	3	4	5
14. I am able to apply my knowledge to a wide variety of issues.	1	2	3	4	5
15. I enjoy learning even when I am not in school.	1	2	3	4	5
16. I can quickly judge people and decide whether or not I can get along with them.	1	2	3	4	5
17. I am able to explain things clearly.	1	2	3	4	5
18. I ask good questions when trying to clarify a solution.	1	2	3	4	5
19. I present issues in a clear and precise manner.	1	2	3	4	5
20. The people from my hometown are better people than those from other communities.	1	2	3	4	5
21. I search for the truth even when it makes me uncomfortable.	1	2	3	4	5
22. I keep on working on things until I get them right.	1	2	3	4	5
23. I will go out of my way to find the right answers to a problem.	1	2	3	4	5
24. All murderers deserve the death penalty.	1	2	3	4	5
25. The problem with politicians is they cannot see simple solutions.	1	2	3	4	5
26. Homeless people should just get a job.	1	2	3	4	5



CRITICAL THINKING DISPOSITION ASSESSMENT (TEACHER'S GUIDE)

►Directions:

Indicate how much you agree or disagree with each numbered statement by circling the appropriate number. 1 = Strongly disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strongly agree.

	SD	D	U	A	SA
m1. When someone disagrees with me I usually tune him or her out.	1	2	3	4	5
e2. I look for opportunities to solve problems.	1	2	3	4	5
e3. I am interested in many issues.	1	2	3	4	5
i4. It is important for me to have a deep understanding of more than one issue.	1	2	3	4	5
e5. I am able to relate to a wide variety of issues.	1	2	3	4	5
i6. I ask lots of questions in a learning environment.	1	2	3	4	5
e7. I enjoy finding answers to challenging questions.	1	2	3	4	5
e8. I am a good problem solver.	1	2	3	4	5
e9. I am confident that I can reach a reasonable conclusion.	1	2	3	4	5
i10. It is important to be well informed.	1	2	3	4	5
m11. I am not likely to change my values even when I am given new information that might conflict with them.	1	2	3	4	5
i12. I enjoy solving problems.	1	2	3	4	5
m13. I know I have biases and if other people can't accept that it is their problem.	1	2	3	4	5
e14. I am able to apply my knowledge to a wide variety of issues.	1	2	3	4	5
i15. I enjoy learning even when I am not in school.	1	2	3	4	5
m16. I can quickly judge people and decide whether or not I can get along with them.	1	2	3	4	5
e17. I am able to explain things clearly.	1	2	3	4	5
e18. I ask good questions when trying to clarify a solution.	1	2	3	4	5
e19. I present issues in a clear and precise manner.	1	2	3	4	5
m20. The people from my hometown are better people than those from other communities.	1	2	3	4	5
i21. I search for the truth even when it makes me uncomfortable.	1	2	3	4	5
e22. I keep on working on things until I get them right.	1	2	3	4	5
i23. I will go out of my way to find the right answers to a problem.	1	2	3	4	5
m24. All murderers deserve the death penalty.	1	2	3	4	5
m25. The problem with politicians is they cannot see simple solutions.	1	2	3	4	5
m26. Homeless people should just get a job.	1	2	3	4	5

Bold—reverse coded, e—engagement, m—maturity, i—innovativeness

