



PLUS,
MINUS,
INTERESTING

*Thinking
strategies
to enhance skills
of analysis,
creativity,
and problem
solving.*

Grade: 4/Sci/SS

PLANT PMI POSSIBILITIES

Brief Description of the Lesson: Students reflect on information learned in the Fast Plants science unit and in history about liberty. They use the PMI process to categorize their responses and compare the concept of liberty to plants.

Pre-assessment/Prior Knowledge:

- Students have indicated a basic understanding of the PMI strategy through the introductory lesson (p. 47).

SOL/POS Objective:

Science 4.4 Students investigate and understand how plants and animals in an ecosystem interact with one another.

History VS.1 The student will develop skills for historical and geographical analysis including the ability to

- a) identify and interpret artifacts and primary and secondary source documents to understand events in history
- b) determine cause and effect relationships
- c) compare and contrast historical events
- d) draw conclusions and make generalizations
- e) make connections between past and present
- f) sequence events in Virginia history
- g) interpret ideas and events from different historical perspectives
- h) evaluate and discuss issues orally and in writing

Instructional Strategy:

Identifying Similarities and Differences- Students analyze topics using PMI and identify and compare similarities between the topics.

Materials:

- PMI graphic organizer (p. 44)
- post-it notes

Enduring Understanding:

- Assessing the pluses and minuses of a situation focuses one's thinking, resulting in more informed decision-making.
- PMI is a good tool for organizing thinking.
- Analogies clarify and/or reinforce the understanding of concepts such as liberty.

Essential Questions:

- Should the pluses and minuses be weighed equally in decision-making?
- Do two seemingly unlike objects always have common characteristics? Explain.



PLUS,
MINUS,
INTERESTING

*Thinking
strategies
to enhance skills
of analysis,
creativity,
and problem
solving.*

- Do you ever **not** have a choice in a decision you need to make? Explain.

Teach and Explore Strategy:

- George Washington said, “*Liberty, when it begins to take root, is a plant of rapid growth*” What did he mean by that? How else is liberty like our fast plants? What are the positive aspects of liberty? What are the negatives? (Record on class PMI chart) What is interesting about liberty?
- Just as liberty has positive and negative attributes, so do plants. In small groups you will discuss and record the benefits (+), problems (-) and interesting roles of plants in our lives. (Record responses on Post-It Notes for ease of sharing on a class PMI chart.)
- Groups post responses on class chart. Discuss.
 - Were there any items that were identified as both positive and negative? Why?
 - Which category had the fewest responses? Why?
- What does it mean to “make the strange familiar?”
- At first it may seem like plants and liberty have no commonalities. It is a strange comparison. But, look closely at both PMI lists. What comparisons can you make between plants and liberty based on the PMI responses? In this way, you are making the strange familiar.
- Try force fitting one of your positives for plants to liberty. (Modeling an example may be necessary in making the “strange familiar”.) What other connections can you make?
- Create an analogy comparing plants and liberty. Write it as a slogan, ad, poster, or form of your choice. Illustrate.
- How has your thinking changed as a result of what we did today?

Assessment Evidence:

- Class discussion
- Quality of responses on PMI
- Final analogy

Metacognition:

- When have you used PMI informally in your own life? (Ex: How to spend allowance, where to go on vacation, etc.) How was it beneficial to your decision making?
- Discuss a time when the minuses of an issue lead to further investigation.

Extension:

- Students design a “liberty plant” or “freedom plant.”(Remind students that there was already a Liberty Tree and to be creative and original thinkers.)