



Writing in Environmental Science

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WRITING IN SCIENCE: Resources

- *Writing Across the Curriculum: Science*. Located at www.michigan.gov/science
- *Reading and Writing in Science: Tools to Develop Disciplinary Literacy*, Maria Grant and Douglas Fisher.
- *How to Write to Learn Science*, Bob Tierney and John Dorroh, NSTA Press
- “Becoming Environmentally Literate Citizens”, Susan L. Groenke and Randall Puckett, NSTA The Science Teacher, November 2006.

WRITING TO LEARN

A Writing-to-Learn strategy is one that teachers employ throughout and/or at the end of a lesson to engage students and develop big ideas and concepts.

WRITING TO LEARN

- ▶ Requires higher-level thinking skills
- ▶ Focuses on ideas rather than correctness of details

WRITING TO LEARN

There is a strong connection between Writing to Learn strategies and Formative Assessment.

WRITING TO DEMONSTRATE KNOWLEDGE

A Writing to Demonstrate Knowledge strategy allows students to show what they have learned by synthesizing information and explaining or applying their understanding of concepts and ideas.

Students write for an audience with a specific purpose. Products may apply knowledge in new ways or use academic structures for research and/or formal writing.

WRITING TO DEMONSTRATE KNOWLEDGE

A Writing to Demonstrate Knowledge assignment:

- Requires a report, essay, project or other more formal paper
- Is a “finished product” which adheres to format and style guidelines or standards.
- May require a period of weeks of work including revising and editing.



WRITING TO DEMONSTRATE KNOWLEDGE

Writing to Demonstrate Knowledge
has a strong connection to
Summative Assessment.

Write-Pair-Share-Write

Read the article: *Writing Across the Curriculum* by Steve Peha

Write: Individual Reflection on the following prompt.

Give two statements from the reading that you find the most relevant. Why?

Pair and Share: Read each other's responses first and then discuss differences and similarities.

Write: Incorporate the insights that you gained from the discussion with your partner into your answer for the original prompt.

RAFTS

RAFT COMPONENTS

- **R** ROLE (Who is the writer?)
- **A** AUDIENCE (To whom is the writer writing?)
- **F** FORMAT (What format is used for the writing?)
- **T** TOPIC (What are you writing about?)

RAFT

- Encourages students to focus on audience and voice
- Helps students apply content in authentic context
- Allows student to demonstrate their understanding of targeted content

Create RAFT

Activity Directions:

- Work with a partner to create a RAFT using the template.
- Be ready to share your RAFT with the group.

ARGUMENTATION

Argumentation has its basis in:

CLAIM: A statement about the solution to a problem or answer to a question

EVIDENCE: Scientific data that supports the claim.

REASONING: A logical scientific argument that explains why the data counts as evidence in support of the claim.

ARGUMENTATION

Read the article: “PISA: It’s Poverty Not Stupid” from the newsletter *The Principal Difference*.

- Identify a claim made by the author
- List a least three pieces of evidence from the article that relate to the claim
- Provide justification on whether the data supports the claim made by the author.

ARGUMENTATION

Argumentation involves:

- Research on both positions of a controversial science related issue
- Arguments and Counter Arguments
- Prioritization of arguments in order of importance
- Formal presentation of final product

Exit Slip

3-2-1 format:

- **3 things I have learned about Writing in Science**
- **2 questions I still have about Writing in Science**
- **1 action I will take as a result of what I have learned so far**

Search for the Truth

- Students work in pairs
- Each partner takes a position on an issue.
- Position A starts with discussion point and then gives it to position B to respond. The discussion continues without talking.

Search for the Truth

- When the discussion finishes, each position chooses a Golden Line of the opposing viewpoint.
- They read the Golden Line to the author and say why they chose that line.
- Then students share their Golden Lines with the class.