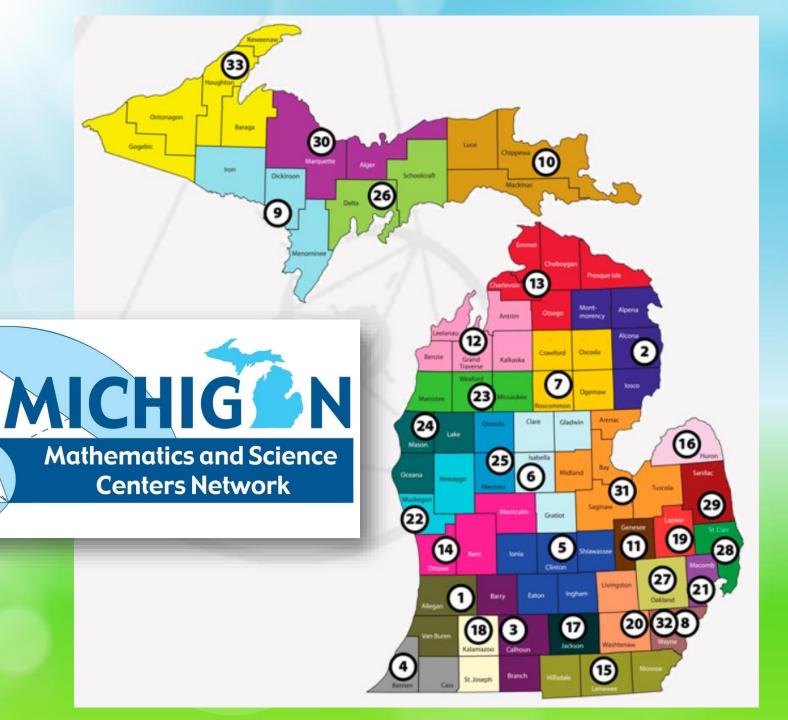
# Effective, Engaging Methods for Writing in Science

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## Silent Argument

## Resources

Online webpage

#### Math

**M1:** Make sense of problems and persevere in solving them

M2: Reason abstractly &

quantitatively

M6: Attend to precision

M7: Look for & make use of structure

M8: Look for & make use of regularity in repeated

reasoning

E6: Use technology & digital media strategically & capably

**M5:** Use appropriate tools strategically

#### **Science**

M4. Models with mathematics

S2: Develop & use models

**S5:** Use mathematics & computational thinking

problems

S1: Ask questions and define

S3: Plan & carry out investigations

S4: Analyze & interpret data

**S6:** Construct explanations & design solutions

**E2:** Build a strong base of knowledge through content rich texts

**E5:** Read, write, and speak grounded in evidence

M3 & E4: Construct viable arguments and critique reasoning of others

**S7:** Engage in argument from evidence

s8: Obtain, evaluate, & communicate information

E3: Obtain, synthesize, and report findings clearly and effectively in response to task and purpose

Commonalities
Among the Practices
in Science, Mathematics
and English Language Arts

Based on work by Tina Chuek ell.stanford.edu

**E1:** Demonstrate independence in reading complex texts, and writing and speaking about them

**E7:** Come to understand other perspectives and cultures through reading, listening, and collaborations

ELA



# The Writing Across the Curriculum (WAC) Document:

- ➤ Developed by the Michigan
  Department of Education in
  conjunction with MSTA & the Office of
  School Improvement
- ➤Online document

#### The WAC Document has two sections:

WRITING-TO-LEARN

WRITING TO DEMONSTRATE KNOWLEDGE

## WAC COMMON FORMAT FOR WRITING STRATEGIES

- Name of the strategy
- Definition of the strategy
  - What does it do?
- How does one implement it?
- Examples with science content

#### **WRITING TO LEARN**

What is it?

A <u>Writing-to-Learn strategy</u> 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
  - The WAC lists 15 writing strategies

#### WRITING TO LEARN

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

#### WRITING TO DEMONSTRATE KNOWLEDGE

What is it?

A Writing to Demonstrate Knowledge strategy is on that 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 requires a period of weeks of work including revising and editing.
- •The WAC includes material on eight different Writing to Demonstrate Knowledge strategies

#### WRITING TO DEMONSTRATE KNOWLEDGE

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

#### TRY A NEW STRATEGY

- COLUMN NOTES (p. 10)
- CONCEPT / VOCABULARY DEVELOPMENT (p. 17)
  - METAPHORICAL THINKING (p. 32)
  - JOURNALISTIC REPORTING (p. 52)

## **SAT Questions**

- ➤ Whether substances are medicines or poisons often depends on dosages, for substances that are ----- in small doses, can be ----- in large.
- a) useless.....effective
- b) mild .....benign
- c) curative.....toxic
- d) harmful.....fatal
- e) beneficial ..... miraculous

- Nightjars possess a camouflage perhaps unparalleled in the bird world; by day they roost hidden in shady woods, so ----- with their surroundings that they are nearly impossible to --.
- a) vexed....dislodge
- b) blended.....discern
- c) harmonized......interrupt
- d) impatient.....distinguish
- e) integrated....classify

### Text in the Middle