

Writing T-Chart Cubing

CIP 47.0613 Medium-Heavy Vehicle and Truck Technology/Technician

Draw evidence from reading to support writing.

Program Task:	PA Core Standard: CC.3.6.11-12.H
107: Follow EPA standards for cleaning and disposal of waste and fluids.	Description: Draw evidence from informational texts to support analysis, reflection, and research.

Program Associated Vocabulary:	Reading Associated Vocabulary:
Environmental Protection Agency (EPA) Synthetic oil Engine oil Transmission fluid Refrigeration oil Compressor oils Industrial hydraulic fluids Waste oil Antifreeze Hazardous waste management	Describe Compare Associate Analyze Apply Argue Argument Explanatory Informative

Program Strategy:	Literacy Strategy:
<p>Use the cubing strategy to have students examine a topic from multiple perspectives before writing.</p> <p>After introducing the cubing strategy and before starting the project, present the following prompt to students.</p> <p><i>You are a team member of ABC Trucks Unlimited, Inc. As medium-heavy vehicle and truck technology technicians, your team has been asked to create a training presentation for new hires. The presentation is to provide tips for successful cleaning and handling of waste and fluids based on EPA standards. Recently, the company has had an EPA finding because they mixed the oil with hazardous waste, which means it will have to be managed as a hazardous waste.</i></p>	<p><i>Whole Group</i></p> <p>Introduce the concept of cubing. Divide the class into small groups or pairs. Identify one topic to use for the exercise. This may be a major earlier concept related to the class or something about which all students would have some knowledge (e.g., college, democracy, family, comedy). Assign each team one of the six sides of the cube. Walk through questions for each of the six verbs to help students get started.</p> <ul style="list-style-type: none"> Describe it: How would you describe this topic/issue/event/person? Describe key characteristics/points/and/or attributes including size, shape, and colors. Compare it: What is it similar to? Associate it: What does it make you think of? How does the topic connect to other topics/issues/subjects? Analyze it: Tell how it is made or what it is composed of. How would you break the

Program Strategy:

Hazardous waste disposal is a lengthy, costly and strict regulatory process. Your manager wants to make sure this presentation makes an impact and has highly recommended including multimedia.

After students have read identified texts or conducted independent research, have them participate in a cubing strategy to review what they have learned and prepare for writing.

Provide students with a cube with the prompts: describe, compare, associate, analyze, apply and argue. Have pairs or teams of students complete a cubing exercise for successful cleaning and handling of waste and fluids based on EPA standards.

Lead a discussion of possible answers by having each team roll their cube and respond to the perspective that lands on top. In some cases, that will mean that the same prompt appears more than once. Push students to think of different responses if that happens.

If students are not clear on any aspect, direct them to do further research before developing their presentations.

Have students use this analysis to develop an outline of their presentations.

Literacy Strategy:

topic/problem/issue/event/decision into smaller parts?

- Apply it: What can you do with it? How is it used? How does it help you understand other topics/issues/decisions/events?
- Argue for or against it: Take a stand and list reasons for supporting or not supporting it.

Have groups discuss their answers. Use this discussion to clarify whether students are addressing the specific prompt.

Guided Practice

Provide a reading passage to student teams and have them complete the cube for the passage.

Have each group report their answers. Discuss any discrepancies.

Discuss how analyzing different aspects of a topic can help with writing. Have students defend their answers; some might be useful in both purposes.

- Which aspects would be most helpful for writing an argument? (likely answers: compare, analyze, apply, argue)
- Which perspectives would be most helpful for writing an informative or piece? (likely answers: describe, compare, associate, analyze, apply)

Application

Provide students with a writing prompt or scenario. Have them analyze the type of information they will need to support the writing. They can then use information they have already collected or research additional information to support the points they want to make.

In debriefing, use the following questions:

- Why is it important to understand what the different perspectives mean?
- Why is it important to identify different perspectives for a topic?
- How does considering the different perspectives help to plan writing?

Listen for:

- Understanding of what each perspective means
- Recognizing the importance of understanding a topic from many perspectives
- Understanding that the different perspectives help in developing important ideas in writing

Instructor’s Script – Cubing

It is critical that students understand that that topics often have many perspectives. Too often, we often look at only one side. This is especially important if students are presenting information to others.

Cubing requires students to look at multiple perspectives. It is helps when analyzing reading passages as well as determining potential elements before writing.

Common Mistakes Made by Students

Students often don’t think deeply about topics before they begin to write. Especially for argumentative writing, they need to consider all perspectives before writing. Not understanding a topic in depth leads to weak or faulty reasoning.

CTE Instructor’s Extended Discussion

Have students research companies that have violated the EPA requirements for cleaning and disposal of waste and fluids. Why would a company violate EPA requirements? What are the recommended clean-up practices for used-oil handlers who have a spill on-site? The [EPA](#) has useful resources for this debate.

Sample Questions

Career and Technical Concepts

Question	Answer
Used oil should be _____. A. Sold on the open market. B. Burned at another step. C. Stored indefinitely on site. D. Collected by an environmental service.	D. Collected by an environmental service.

PA Core Reading Concepts

Question	Answer
If you were asked to analyze <i>democracy</i> , which statement would be an analysis? A. It is a popular form of government. B. One component is people selecting their leaders. C. Democracies and republics are very similar. D. The United States is a democracy.	B. One component is people selecting their leaders.