Writing T-Chart Thesis-Proof Organizer

CIP 46.0503 Plumbing Technology/Plumber

Organize information for an argumentative paper by identifying support and opposition.

Program Task:	PA Core Standard: CC.3.6.11-12.A
2201: Describe and design a hydronic heating system.	Description: Write arguments focused on discipline-specific content. • Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence. • Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.

Program Associated Vocabulary:	Writing Associated Vocabulary:
Hydronic heating system Radiant floor system Indirect water heater Boiler Sealed system	Thesis Statement Claim Argumentative writing Opposition Summary

Program Strategy:	Literacy Strategy:
Use the thesis-proof organizer strategy to ensure that students develop their proposition and thesis statement with appropriate evidence before they start writing. After introducing the thesis-proof organizer strategy and before starting the assignment, present the following prompt to the students: *Hydronic heating systems are just becoming widely available in your area. As an apprentice plumber in a large company, you have been asked to develop a*	*Whole Group* Lead students through a simulation of establishing a proposition/thesis statement and determining arguments for and against the proposition. Use a topic about which students will have strong opinions. Present the proposition: Same-sex schools are preferable to co-educational classes. Have students share as much evidence as they can to support the proposition. Record the brainstorming on chart paper, the board or electronically.

Program Strategy:	Literacy Strategy:

presentation for potential home builders and clients on the benefits on the system.

You have the opportunity to talk with manufacturers, visit a home with a hydronic system and to do other research. Using what you learn, develop a thesis that argues that the hydronic system is an excellent choice. Use that thesis as a basis for your presentation that should include both print and electronic materials.

Students should develop a comparison chart for hydronic system and other heating systems and then use this chart to develop a proposition: A hydronic system would be best to use.

Once students have a proposition, have them complete a thesis-proof organizer. It is possible that the hydronic system would only be best under certain circumstances and that should be reflected in the organizer.

Students will develop the chart with evidence to support the hydronic system. On the right side, they will identify arguments that some might make for another system. This will help them address and refute other proposals.

At this point, meet with each student or team to discuss their recommendation and evidence. Help them determine whether they have sufficient evidence to support their recommendation before they move into developing the written and electronic presentations.

Next, have students share as much evidence as they can generate that opposes the proposition.

At this point, students determine their thesis statement, which will clearly state whether they support or oppose the proposition.

Share the template with the students. You can provide the template or simply show it for them to copy.

Make the point that the best argumentative writing addresses and refutes the other side. This often requires additional research.

Guided Practice
Provide pairs of students with pro and con articles on a single topic. One good source for this is Newsela.

Have them develop a proposition on the topic of the articles and identify support and opposition from the articles.

Once they have completed the organizer, have them write a thesis statement.

Application
After presenting a scenario or task for students, have them develop a preliminary proposition related to the task. Use the thesis-proof organizer to record the proposition.

Based on their research or experiences, students then identify evidence that supports and refutes the proposition. These notes and their sources go into the organizer.

Once students have enough information to determine their position, have them draft their thesis statement for the assigned writing.

In debriefing, use the following questions:
- Why is it important to identify evidence for the side opposite yours?
- Why is it helpful to organize notes this way?
- Why is it important to summarize the notes?

Listen for
- Understanding why it is important to identify opposing arguments.
- It is important to clearly identify evidence that supports your thesis.
- This activity requires students to think about a topic from multiple perspectives.

Instructor's Script – Thesis-Proof Organizer

The thesis-proof organizer helps students determine evidence that supports or refutes their proposition. This ensures that they have investigated various options and can defend their position thoroughly.

Proposals are essentially written arguments: "what I am presenting is better than other options." It is critical that students can identify evidence that supports their propositions. It is also important to know the counter-arguments so that they can be addressed.

Common Mistakes Made by Students

Young children attempt persuasion from a very young age. They, however, most often rely on selfish reasons to try to get someone to do what they want: "because you like me" or "because this will make me happy." In arguments, it is critical that writers can identify not only what they want someone to do, but also the other sides of the proposition. They need to identify evidence that will support their side and evidence that might be used against this idea. This allows them to address those concerns.

CTE Instructor's Extended Discussion

There are many several types of heating systems available today. Because hydronic heating requires plumbing to install, plumbing students are in a unique position to advocate for this system. However, to support a proposal, they will also need to be familiar with other available systems.

Sample Questions:

Career and Technical Concepts

Question	Answer

Plumbers often have to present proposals for installing systems in new construction. Effective proposals address why their recommendations are best. Which of the following types of support would be most effective?
   A. In my opinion…
   B. I read a report that…
   C. The data show that…
   D. Some of your neighbors say….
	C. The data show that….

PA Core Reading Concepts

Question	Answer

If you were identifying evidence that supports the thesis that students should be paid for grades, which of the following would be most helpful?
   A. Some students think grades would go up.
   B. Schools do not have money for this incentive.
   C. At XYX High School, grades went up when students were paid $5 for each A.
   D. Researchers investigated grades at 100 schools across three states.
	A. At XYX High Schools, grades went up when students were paid $5 for each A.

Thesis-Proof Organizer Template

Proposition/Thesis Statement:	
Support	**Opposition**
Summary	
Make sure to document sources.	