

**MASS CLEAN ENERGY CENTER** **AUTHENTIC MATERIAL ACTIVITY · HOW TO FIND INFORMATION IN A  
MANUFACTURER'S OPERATING GUIDE****How to Find Information in a  
Manufacturer's Operating Guide**

Contextualized ESOL Support Activity

**ACTIVITY**Oral  
Communication,  
Critical Thinking,  
Self-Directed  
Learning**60**

minutes

**AUTHENTIC MATERIAL ACTIVITY – HOW TO FIND INFORMATION IN A MANUFACTURER'S  
OPERATING GUIDE****ACTIVITY OVERVIEW**

|                                            |                                                                                                                                                                                                                                             |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Objective</b>                           | Students will be able to read and find information in a manufacturer's operating guide.                                                                                                                                                     |
| <b>Durable Skill</b>                       | Oral Communication, Critical Thinking, Self-Directed Learning                                                                                                                                                                               |
| <b>When to Use</b>                         | Introduce this before Amatrol Module 3. Then revisit this activity when doing troubleshooting and component testing.<br><b>OR</b><br>Use it when introducing what the heat pump system is, especially when starting to cover installations. |
| <b>Student Interacts with Hypothetical</b> | Service technicians                                                                                                                                                                                                                         |
| <b>Activity Type</b>                       | Pairs work, Large group discussion                                                                                                                                                                                                          |
| <b>Time Needed</b>                         | 60 minutes                                                                                                                                                                                                                                  |

**STUDENT MATERIALS**

- Handout 1: Authentic Materials - Vocabulary Definitions

- Handout 2: Mitsubishi Split-Type Air Conditioners, Indoor Unit, MSZ-AS90VGD, Operating Instructions (or students can access it online, [Mitsubishi Split-Type Air Conditioners, Indoor Unit, MSZ-AS90VGD, Operating Instructions](#))
- Handout 3A: Student - Reading and Understanding Information in Manufacturer's Operating Guide

### **Instructor Preparation**

#### **Activity Location**

- Classroom with internet access

#### **Pre-Work**

- Depending on students' digital literacy skills, specifically their familiarity with searching for information in a PDF document, consider doing a pre-activity on how to use the search functions and key words to find information quickly.

#### **Material Preparation**

- Review student handouts. Make copies of student Handout 1, enough for one copy per student. For Handout 2, if the classroom does not have internet access, make copies of the handout, enough for one copy per student. If the classroom has internet, have students access the operating manual online.
- Make one copy of Handout 3B: Instructor Key - Reading and Understanding Information in Manufacturer's Operating Guide
- If needed, refer to the online [Mitsubishi Split-Type Air Conditioners, Indoor Unit, MSZ-AS90VGD, Operating Instructions](#).
- **Best Practice**
  - Identify any key vocabulary terms from Handout 1: Authentic Materials - Vocabulary Definitions that students should be referencing as part of the activity and be prepared to reference these during the activity.

### **ACTIVITY DIRECTIONS**

1. Tell students there are many manufacturers of heat pump equipment. Name a few manufacturers:
  - Mitsubishi, Daikin, Trane, Rheem
2. State that even within one manufacturer there are many equipment models. When they make a service call, they might find an older equipment model or one that they are not familiar with. This makes it important to know how to access and read operating guides for each specific manufacturer's heat pump model they work on.
3. Ask them, "What type of information might you need to know about a piece of equipment when you are on a job site?" Record their answers on the whiteboard or screen.
4. Explain that they will have an opportunity to practice finding information in a manufacturer's manual or guide. Distribute the two handouts: 1) Handout 2: Mitsubishi Split-Type Air Conditioners, Indoor Unit, MSZ-AS90VGD, Operating Instructions, or have students access it online, and 2) Handout 3: Reading and Understanding Information in Manufacturer's Operating Guide.

5. Note that they will be using the manufacturer's operating guide to answer the questions. Spend time reviewing the directions in Handout 3.
6. Divide students into pairs/trios. Each group will review the operating instructions working together to identify first the most likely place to find the information and then the correct answer to the questions which are found in the student handout. Note that if students are accessing the manufacturer's operation guide online, they can use the search function to find what they are looking for. Allow at least 20 minutes.
7. Then review the questions having each group answer one question and state where they found the information. Debrief as each group responds. Use the guiding questions below:
  - Where did you look for the information?
  - Where did you anticipate it might be located?
  - If it wasn't in the first place you looked, how did you decide where to look next?
  - What other strategies did you use to find the information?
8. Each student corrects their answers as each group shares their answers.
9. Wrap-up by noting that while service technicians are not expected to know everything about all heat pump equipment, they are expected to know how to find information about any equipment and specific model they are working on. Knowing how to find that information will make them a stronger and more efficient service technician.

### ESOL Strategy Note

Before pairs begin working in the operating guide in step 6, review the table of contents together as a class and point out how section headings map to the type of question being asked (e.g., "weekly timer" questions live under a "Timer" heading) — this models the search strategy so students are hunting with a plan rather than scanning the whole document line by line.

During the debrief in step 7, encourage students to point to or read aloud the exact heading or sentence where they found their answer rather than just stating the answer — this keeps the focus on the skill of locating information in technical text, which is especially useful practice for multilingual learners building confidence with dense manuals.