**Lesson Information**

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| Lesson: (1 of 3) Basic Installation and Maintenance Length: 90 minutes  Unit: (3 of 3) System Installation and Upkeep  Course: HVAC |

**Content Assumptions**

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**Essential Questions**

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| 1. What are the various conectors used in HVAC systems? How are they used? 2. How are HVAC systems properly installed and maintained? |

**Objectives Assessments**

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| After completing this lesson, students will be able to:   1. Identify the various connectors for HVAC systems and describe their uses. 2. Identify improper installation methods and describe the proper alternatives and maintenance practices. | 1. Connections identification quiz — Instructor observation 2. Hack Attack game — rubric |

**Activities/Instruction**

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| **Making Connections** (30 minutes)  Using samples as listed in the Materials section, Instructor explains each type of fastener —in which system(s) it is used and how, how it is graded, etc. After explanations, Instructor calls on students to name and describe random fasteners Instructor points out.  **Hack Attack** (60 minutes)  Using photos from the “Hall of Pride” Internet site listed in the Materials section, Instructor explains how to properly install and maintain a variety of HVAC systems. Students take notes. Then, using photos from the “Hall of Shame” Internet site listed in the Materials section, Instructor assigns students photos to critique. Students are to identify, in writing, what is wrong in the photo, what installation and maintenance measures should have been observed, and how proper methodology would have solved/prevented the problem shown in the photo. |

**Materials**

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| For Instructor:   * Samples of fasteners, gaskets, belts, etc. used in HVAC systems * http://hvacfun.com/index-hall-of-pride.html (Gallery of well-done HVAC installations) * http://hvacfun.com/index-hall-of-shame.html (Gallery of poorly-installed/maintained HVAC systems/components) * [HACK ATTACK RUBRIC] |