**Lesson Information**

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| Lesson: (1 of 5) Ductwork Length: 90 minutes  Unit: (2 of 3) System Components  Course: HVAC |

**Content Assumptions**

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| Prior to this class, students have taken construction drawing and math classes as well as lesson 3, “System Design,” of unit 1, “System Basics,” in this HVAC course. |

**Essential Questions**

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| 1. What are the components of ductwork systems? 2. How are different types of ductwork suited for different applications? |

**Objectives Assessments**

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| After completing this lesson, students will be able to:   1. Demonstrate their knowledge of terms and concepts associated with ductwork and air distribution systems. 2. Appropriately select and estimate materials for use in a residential air distribution system. | 1. Ductwork diagram — key 2. Duct materials estimate — rubric |

**Activities/Instruction**

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| **Show and Tell** (45 minutes)  Using diagrams (like those listed in the Materials section), Instructor explains different types of ductwork systems, including insulation, test equipment, and tools used to size and install ductwork (e.g., friction-loss charts, duct-sizing tables, etc.). Students follow along, ask questions, take notes, and fill out their blank copies of the diagrams.  **Estimate** (45 minutes)  Using construction drawings as listed in the Materials section, students are to write out materials estimates, including all types of ductwork, insulation, and fasteners/accessories needed to install the system as depicted on the drawings. |

**Materials**

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| For students:   * Sample construction drawings for a simple residence (see lesson 3, “System Design,” of unit 1, “System Basics,” in this HVAC course)   For Instructor:   * http://www.perfect-home-hvac-design.com/hvac-for-beginners.html (Labeled and unlabeled diagrams of a typical ductwork system) * [DUCT MATERIALS ESTIMATE RUBRIC] |