**Lesson Information**

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

**Content Assumptions**

|  |
| --- |
|  |

**Essential Questions**

|  |
| --- |
| 1. How are different pipes best suited for different applications? |

**Objectives Assessments**

|  |  |
| --- | --- |
| After completing this lesson, students will be able to:   1. Demonstrate their knowledge of various types of piping and their applications. | 1. Pipe comparison poster — rubric |

**Activities/Instruction**

|  |
| --- |
| **Show and Tell** (60 minutes)  Using supplemental materials if desired (as listed in the Materials section), Instructor explains about different types of piping materials (i.e., copper, plastic, and ferrous metal), including where they are commonly used, what flows through them, how to prepare them for being joined, how to join them, and how to install them in their systems. Throughout these explanations, students ask questions for clarification, and Instructor guides students to think about the similarities and differences among the different types of piping. Students take notes.  **“Vhich Pipe Venn?”** (30 minutes)  Instructor divides students into groups (however many Instructor wants). Using their notes from the class discussion, students (as groups) make Venn diagram posters depicting similarities and differences among the three types of pipe (i.e., copper, plastic, and ferrous metal) discussed. Each poster should include, for each type of pipe:   * Where it is used * What is used inside it * How it is prepared for joining * How it is joined (including what fittings are used) * How it is installed (including what supports are used) |

**Materials**

|  |
| --- |
| For students:   * Posterboard, markers/pens/pencils of various colors   For Instructor:   * Samples of different kinds of pipes, fittings, and supports * Supplemental materials, as desired: * http://www.youtube.com/watch?v=RWwYvNm42aI (How-to video: cut, clean, ream, and debur copper pipe) * http://www.askthebuilder.com/how-to-solder-copper-pipe-video/ (How-to video: solder copper pipe) * http://www.thisoldhouse.com/toh/video/0,,20051881,00.html (How-to video: work with PVC pipe) * http://www.askthebuilder.com/how-to-glue-pvc-pipe-video/ (How-to video: glue PVC pipe) * http://www.youtube.com/watch?v=30SAp4iEYhk (How-to video: cut cast iron pipe) * http://www.askthebuilder.com/sealing-black-iron-pipe-joints-video/ (How-to video: seal cast iron pipe joints) * [PIPE POSTER RUBRIC] |