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| **Topic:** | **4** | **3** | **2** | **1** |
| **Sketching: Penciling** | Lines are straight and accurate. | Lines are fairly straight and accurate. | Lines vary in straightness and accuracy. | Lines are feathered, curved, or inaccurate. |
| **Sketching: Proportion** | Pieces are correctly sized relative to one another. | Most pieces are correctly sized relative to one another. | There is some distortion in the sizing of the pieces. | Pieces are sized without any regard for relative proportion. |
| **Sketching: Color** | Color is used to clarify or enhance the sketches. | Color is used but does not add meaningful enhancement or clarification. | Color is used but is applied inconsistently or to no effect. | Color distracts from the three dimensional sketch. |
| **Sketching: Dimensions/ Annotation** | Overall puzzle dimensions are given. Pieces are numbered in the individual and overall views. | Overall dimensions are given and most of the pieces are numbered or labeled. | Overall dimensions are given but pieces are not numbered or labeled. | No dimensions or annotations have been added. |
| **Design Requirements**  **(see list)** | Puzzle meets all design requirements. | Puzzle meets most design requirements. | Puzzle meets some design requirements. | Puzzles does not meet any of the design requirements. |

**Design Requirements:**

* Puzzle must contain at least 5 pieces
* Each piece must have 4 or more ½ inch cubes
* At least one piece must interlock with another.
* No more than two pieces can be the same
* Overall puzzle must contain 27 of the ½ inch cubes and measure 1 ½ inch x 1 ½ inch in size

*This project and rubric were adapted from the puzzle cube project within the Introduction to Engineering Design course from the PLTW Engineering program (Project Lead The Way, Inc. 2015).*