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| Kristin Coletti |
| For 10-2 and 10-3 |
| Seventh Grade Science |
| Materials:  Triple Beam Balance  100mL Graduated Cylinder  Clay  Crayons  Wooden Dowel of Varying Sizes |
| MA DOE Standards: PS...  2. Differentiate between volume and mass. Define density.  3. Recognize that the measurement of volume and mass requires understanding of the sensitivity of measurement tools (e.g., rulers, graduated cylinders, balances) and knowledge and appropriate use of significant digits.) |
| Lesson Objectives: Students will be able to...  1.) Measure volume using water displacement;  2.) Calculate the density of three different materials. |
| Language Objectives: Students will be able to…  1.) Read directions involving key vocabulary: mass; volume; density, units; g; cc; g/cc submerged; and, calculate. |
| Engagement:  Have a sample of the three items, each in water. Instruct students to record their observations, and write one scientific question that could be answered by conducting research and/or an experiment. |
| Exploration:  Conduct the experiment, "Making Sense of Density," as adapted from the Prentice Hall Science Explorer Series. |
| Explanation:  Which graduated cylinder did you choose to use? Why?  Compare your results of the three samples (whole, piece one, and piece two). What do you observe?  Did the size of the sample affect the density of the object? Consider the mass and volume of an object, and try to explain why this is true. |
| Elaboration:  Design an experiment to determine the density of olive oil. |
| Assessment:  MCAS open response question. |