

Name of Lesson/Topic of Study Density Grade Level(s) 8th Duration of Lesson/Unit 2 days

Prepared by Tamara Motisi

Curriculum Resources: Miami Dade County Science Pacing Guide

State Standards

SC.8.P.8.3 Explore and describe the densities of various materials through measurement of their masses and volumes.

Learning Goals (to be written on board or overhead and in student note books)

Students will be able to measure and calculate density.

Students will be able to recognize that density is an independent physical property of matter.

Key Vocabulary: physical property, matter, mass, volume, density

Preparation Get a fish tank or big container with water, get a diet coke, and a regular coke, get wood blocks (small and large), graduated cylinder, balance, ruler.

Safety Considerations _____

What to Do: (see explanation on page 2)

Lesson Phase	Notes and Discussion (Details of what the teacher and students will do.)	Materials Needed	Essential Questions (Probes/Questions to ask students at every phase in the lesson)	Evaluate (Student outcomes to "Look For", products, or performances at every phase of the lesson)
Engage mentally engage students with an event or question.	Fill fish tank with water and put diet coke and regular coke inside and have students observe what happens.	Fish Tank, or big transparent container, water, diet coke, regular coke.	Why does the regular coke sink but the diet coke floats?	
Explore hands-on experiences to explore the concept further.	Divide the class in groups and provide enough materials for the students to explore. They should develop a hypothesis about why the diet	Diet coke, regular coke, balance.	Observe both containers and have students see what is different about both? Is the mass of the same volume of each coke the	Students should measure the mass of equal volumes and notice that they are not equal, thus different

Note: This lesson template is adapted from the 5E Instructional Model developed by the Biological Sciences Curriculum Study.

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	<p>coke floats and the regular coke sinks.</p> <p>They should plan an experiment to test their hypothesis (measure density).</p> <p>They should read the label of the containers.</p> <p>Have students pour the same amount of each coke and measure the density.</p>		<p>same? Why not?</p>	<p>density.</p>
<p>Explain</p> <p>provide the scientific explanation and terms for what they are studying...via lecture, demonstration, reading, or multimedia (video, computer-based).</p>	<p>Students will complete a lab report.</p>		<p>Are the densities of each of the coke the same? Why not? Why one floats and the other one doesn't? Compare their densities to the density of water.</p>	<p>Students should observe that regular coke uses sugar and diet uses a sugar substitute. They should observe that regular coke is heavier (more mass) because of the sugar.</p>
<p>Elaborate/Extend</p> <p>opportunities to apply the concept in unique situations, or they are given related ideas to explore and explain using the information and experiences they have accumulated so far. ...discussing their ideas with others, students can construct a deeper understanding of the concepts.</p>	<p>Provide students with a set of Small and big wood blocks.</p>	<p>Small and big wood blocks, rulers, balances.</p>	<p>Have students measure the density by measuring volume and mass.</p>	<p>Students should observe that the density of the same material is the same regardless of size.</p>