

# Overview Chart for Hands-on Activities – Quarter 1

Hands-on Activity	Student Objectives
<b>1 The Density of Liquids</b> <i>page 35</i>	<ul style="list-style-type: none"> <li>• measure the mass and volume of three liquids in order to determine their densities</li> <li>• relate the density of a liquid to its ability to keep an object afloat</li> <li>• observe that density can vary among liquids that appear to be similar</li> </ul>
<b>2 Pressure and Volume of a Gas</b> <i>page 45</i>	<ul style="list-style-type: none"> <li>• measure the volume of a gas as the pressure is increased</li> <li>• graph the relationship between the pressure and volume of a gas</li> <li>• discuss the concept of inverse relationships</li> </ul>
<b>3&amp;4 Solutions and Suspensions</b> <i>page 55</i>	<ul style="list-style-type: none"> <li>• differentiate between solutions and suspensions</li> <li>• separate a suspended material from a solution</li> <li>• separate a solute from water</li> </ul>
<b>5 Atomic Structure</b> <i>page 65</i>	<ul style="list-style-type: none"> <li>• explore the properties of protons, neutrons, and electrons</li> <li>• calculate the number of protons, neutrons, and electrons in an atom, given its atomic number</li> <li>• interpret information on the periodic table</li> <li>• construct model atoms</li> <li>• define <i>isotope</i></li> </ul>
<b>6 Making Molecules</b> <i>page 75</i>	<ul style="list-style-type: none"> <li>• discover that molecules form through the covalent bonding of atoms</li> <li>• learn that the covalent bonding of two or more different types of atoms forms a covalent compound</li> <li>• observe the symmetrical structure of molecules</li> <li>• build models to demonstrate the three-dimensional structure of molecules</li> </ul>
<b>7 Chemical Equations</b> <i>page 85</i>	<ul style="list-style-type: none"> <li>• discuss reactants and products—the components of a chemical reaction</li> <li>• discover how chemical equations are used to describe chemical reactions</li> <li>• simulate chemical reactions with their models</li> <li>• use their models to help them balance chemical equations</li> </ul>
<b>8&amp;9 Oxidation</b> <i>page 93</i>	<ul style="list-style-type: none"> <li>• define <i>oxidation</i></li> <li>• observe an oxidation reaction (in the form of rusting) over time</li> <li>• experiment to determine the factors necessary for oxidation to occur</li> </ul>
<b>10 Plant and Animal Cells</b> <i>page 103</i>	<ul style="list-style-type: none"> <li>• identify the major parts of plant and animal cells</li> <li>• distinguish between plant and animal cells</li> <li>• observe microslide images of real plant and animal cells</li> <li>• speculate as to the function of cell walls and chloroplasts in plant cells</li> </ul>

Process Skills	Vocabulary	Delta Science Reader
measure; collect and record data; infer; observe; interpret data	<b>density, float height, mass, volume</b>	<i>Matter and Change</i> , pages 14–15
measure; display data; communicate	<b>Boyle’s law, inverse relationship</b>	
compare; classify; hypothesize; experiment	<b>evaporation, filtrate, heterogeneous, homogeneous, solute, solution, solvent, suspension</b>	<i>Matter and Change</i> , page 15
investigate; use numbers; interpret data; make and use models; define based on observations	<b>atom, electron, element, energy level, isotope, neutron, nucleus, periodic table, proton, subatomic particles</b>	<i>Matter and Change</i> , pages 2–3
investigate; make and use models; compare; infer	<b>chemical formula, covalent bond, covalent compound, molecule</b>	<i>Matter and Change</i> , pages 6–7
communicate; compare; make and use models; investigate	<b>chemical equation, chemical reaction, product, reactant</b>	<i>Matter and Change</i> , pages 17–18
define based on observations; observe; experiment; use variables	<b>constant, controlled experiment, oxidation, variable</b>	
compare; make and use models; infer	<b>cell, cell membrane, cell wall, chloroplast, cytoplasm, nucleus</b>	<i>Plants in Our World</i> , page 2