

## Chapter 5.1 Basics of Chemistry Test Study Guide: Geology 1P, Mr. Traeger

Section	Major Questions to be asked and/or tasked to be measured	Where do I find the information and/or where did we learn this?
Textbook Section 5.1	<ul style="list-style-type: none"> <li>• What is matter?</li> <li>• What is an element? A compound?</li> <li>• What defines the identity of an element? Protons, neutrons, or electrons?</li> <li>• What is the atom? What is its basic structure with regard to protons, neutrons, and electrons?</li> <li>• What is the periodic table and how was it arranged by Mendeleev in to periods (unlike properties) and families (like properties)? How do you use it to determine how many protons, neutrons, and electrons an atom has? Know how to read the periodic table!</li> <li>• What are ions? How do you calculate the charge on an ion?</li> <li>• What are isotopes and radioactivity? How do you figure out the number of protons, neutrons, and electrons in an isotope? How would you express this in standard isotopic notation i.e.) <math>^{16}_8\text{O}^{2-}</math></li> <li>• What is radioactive decay and how do we use it to date how old things like rock, bone, and trees are?</li> <li>• What are chemical bonds that make compounds? Why do elements want to bond? What are the different types of bonds?</li> <li>• Why are Noble Gases stable, but elements like Sodium and Chlorine are highly reactive?</li> <li>• What elements are basic to all living things? Why is Carbon integral to life?</li> <li>• How did oxygen become available in Earth's atmosphere?</li> <li>• Where did all chemical elements originally come from? I.e.) Big Bang and Supernovae</li> <li>• How would you construct and use a Bohr diagram (similar to Lewis dot diagram) to show chemical bonding and whether it is ionic or covalent?</li> <li>• What are the characteristics of a metal? A nonmetal? A metalloid? How can you use the periodic table to classify a metal, non-metal, or metalloid?</li> <li>• How does the periodic table define our society (i.e.: what we are made of, what the stuff we use is made of, and how technology can make better materials?)</li> <li>• Why are rare earth elements like neodymium so important?</li> <li>• How are elements above atomic #92 made and why don't they exist for very long?</li> </ul>	<ul style="list-style-type: none"> <li>• Properties of Matter Lab</li> <li>• Section 5.1 Properties of Matter Notes</li> <li>• Periodic Table</li> <li>• NOVA: <i>Hunting the Elements</i> video questions</li> <li>• ES0501: <i>How Many Protons, Neutrons, and Electrons are in Elements?</i> and <i>Hunting the Elements</i> Internet Investigation</li> <li>• Chemistry Practice Problems</li> <li>• Section 5.1 Online Homework</li> </ul>