

## UNIT TWO: CHEMISTRY

### 9<sup>TH</sup> GRADE SCIENCE EXAM STUDY GUIDE

**STUDY SESSION: WEDNESDAY, 10/24/2007 IN CLASS AND 3:15-4:00**

**EXAM: THURSDAY, 10/25/2007**

Below is a list of topics covered on the upcoming exam. The exam may consist of multiple choice, matching, and T/F questions. It will also have 2-4 short answer essay questions. Material will come from in-class notes and activities. *Please see me if you have any questions.*

SCIENCE TOPIC	STUDY RESOURCES
• Definition of Chemistry	K-W-L In-Class Notes
• Atomic Structure	“Earth Chemistry” notes guide (10/04) PowerPoint from Earth Chemistry available online <i>Know terms: atom, element, parts of the atom.</i>
• 8 Most Common Elements in the Earth’s Crust	“Earth Chemistry” notes guide Decoding the Periodic Table Worksheet <i>Know some common uses/importance of each</i>
• The Periodic Table	Chemistry Quiz #1 over the Periodic Table “Earth Chemistry” notes <i>Know how to count protons, neutrons, electrons; find atomic number, mass, etc...</i>
• History of the Periodic Table	History handout (available online) History of the Periodic Table Timeline project: <i>Know the important events/names</i>
• Law of Conservation of Mass	“Einstein’s Big Idea” video clip on ‘M is for Mass’ Video Reaction Essay Law of Conservation of Mass Lab
• Chemistry Reaction Types	“Chemistry Reactions” Guided Notes <i>Know all five types and be able to identify the type from a given example (examples online)</i>
• Valence Electrons	“Chemistry Reactions” Guided Notes <i>Know how to find how many valence electrons any atom on the periodic table has</i>
• Ionic and Covalent Bonds	Notes from the reading packet (available online) Ionic and Covalent Bonds Venn Diagram <i>Be able to identify which type of bond results from given element combinations</i>

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**All of these resources have been made available in class.**

For additional copies go to <http://www.mysciencehomework.com>

Short answer essay questions on the test *may* come from the list below.

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1. What is chemistry and why is it important to us?
2. What are the three sub-atomic particles and in which part of the atom are they found? Which of the three is responsible for the *identity* of an atom?
3. What happens to an atom if you change the number of electrons it has? What about if you change the number of protons?
4. Use the terms *matter*, *element*, and *atom* with their definitions in a short paragraph.
5. Name three of the eight most common elements in the Earth's crust and some of their common uses by humans.
6. What is atomic mass and how it is calculated?
7. Who is considered the "father of the Periodic Table" and what were his significant contributions to chemistry?
8. What is the Law of Conservation of Mass? What is the one exception to the law?
9. Why did you use the balloon in the "Law of Conservation of Mass" lab? What would have happened to your results had you not used the balloon?
10. What characteristics of elements are used to arrange them on the periodic table? Include a diagram if you wish.
11. What are valence electrons and why do they matter? How do we know how many an atom has?
12. What is a combustion reaction? Describe its components in detail.
13. Explain at least three differences between ionic and covalent bonds.
14. Draw a diagram representing the bonds formed in water (H<sub>2</sub>O) and salt (NaCl).
15. What forms the actual *bond* that exists in an ionic bond and how do *ions* play a role in it?