

UNIT TWO: CHEMISTRY – EXAM #2
9TH GRADE SCIENCE EXAM STUDY GUIDE
STUDY SESSION: MONDAY, 11/20/2006 IN CLASS AND 3:15-4:00
EXAM: TUESDAY, 11/21/2006

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 essay questions. Material will come from in-class notes, labs, demonstrations, and activities. *Please ask if you have any questions.*

SCIENCE TOPIC	STUDY RESOURCES
• Balancing Chemical Equations	Balancing Chemical Equations Guide (10/27) Balancing Chemical Equations Practice Worksheet Egg quizzes, Daily Questions
• The Carbon Cycle	Carbon Cycle Diagram labeled in class (11/01) <i>Know each step</i>
• Isotopes	Isotopes of Pennies Pre-Lab (11/01) <i>Know definitions</i>
• Calculating Atomic Mass	Isotopes of Pennies Post-Lab Calculations (11/03) <i>Know how to calculate atomic mass given the percent abundance and mass of each isotope</i>
• Radioactive Decay	Radioactive Decay Guided Notes (11/07) <i>Know the definition and three types</i>
• Half-Life Calculations	Radioactive Decay Guided Notes (11/07) Candy Lab and Post-Lab (11/09) Daily Questions, Egg Quizzes <i>Know how to calculate half-life problems</i>
• Radium Dials	Green “Radium Dials” handout (11/10) Radium Dials Projects (11/13, 11/14) <i>Know important details of the radium dials story and it’s implications on society</i>
• Marie Curie	“Marie Curie” Video Clip and Discussion (11/14)
• Fireworks	“Bang, Sparkle, Burst, & Boom” handout (11/15) “Fireworks” response questions worksheet (11/15) Classroom demos of chemicals and color
• Plasma	Notes from class demo and discussion (11/16) <i>Know definition and examples</i>

All of these resources have been made available in class.

For additional copies of all handouts, labs, and worksheets; go to <http://earthscience.wordpress.com>

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

1. What does balancing equations have to do with the law of conservation of mass?
2. What is an *isotope*?
3. How do you calculate *atomic mass*? (hint: it's not just protons + neutrons!)
4. Describe the five main steps of the carbon cycle.
5. How do scientists use Carbon-14 to determine the age of fossils?
6. The half-life of Carbon-14 is 5720 years. If a fossil has only $1/32$ of its original C-14, how old is it?
7. What is *radioactive decay*?
8. What is the *strong nuclear force*? Which force does it *oppose*?
9. Describe in detail the three types of radioactive decay in order of weakest to strongest.
10. Describe the details of the x-ray process. How does it work and why?
11. What is the definition of *half-life*?
12. Name and describe at least two important contributions made to science by Marie Curie.
13. Describe two health risks and two benefits of radiation.
14. What creates different colors in fireworks? Specifically, what makes the difference *between* colors such as red and blue?
15. Define what plasma is in detail and give three examples.