

UNIT SIX –METEOROLOGY
 9TH GRADE SCIENCE EXAM STUDY GUIDE
STUDY SESSION: TUESDAY, 5/22/2006 IN CLASS & AFTER SCHOOL (3-4PM)
EXAM: WEDNESDAY, 5/23/2006

Below is a list of topics covered on the upcoming exam. Same format as before: the exam will consist of multiple choice, short answer, and fill-in-the-blank questions. Material will come from the book and from in-class notes and activities. Please see me if you have any questions.

METEOROLOGY TOPIC	STUDY RESOURCES
• Four Essential Truths of Meteorology	In-Class Notes
• The Earth’s Atmosphere	Textbook (Section 1.1) & Guided Notes Layers of the atmosphere diagram project
• Pressure and Winds	Textbook (Section 1.3) & Guided Notes
• Heating of the Earth	Heating of the Earth Lab <i>Know how different surfaces heat differently</i>
• Humidity and Dew Point	Textbook (Section 2.1) Guided Notes & Water Cycle diagram Water in the Sky Quiz
• Clouds	Self-Guided Notes Water in the Sky Quiz Postcard Assignment
• Air Masses	Textbook (Section 2.2) and Guided Notes Water in the Sky Quiz
• Fronts	Textbook (Section 2.2) and Guided Notes Water in the Sky Quiz
• The Station Model	Forecasting Exercise #1 Web: http://earthscience.wordpress.com
• Weather Radar and Satellite	Forecasting Exercise #2 Web: http://earthscience.wordpress.com
• Weather Forecasting	Forecasting Exercise #3 Weather Forecasting Quiz Web: http://earthscience.wordpress.com
• Severe Weather Safety	Textbook (Section 2.4) PowerPoint Presentation and Notes (5/8-5/10) Severe Weather Safety Tri-fold
• Climate Change	“An Inconvenient Truth” “The Great Global Warming Swindle” Climate Change Paper

1. What are the four essential truths of meteorology?
2. How do temperature and pressure change as you go up through the four layers of the atmosphere? Describe the profile in detail for each layer, starting at the bottom.
3. Why does the wind blow?
4. How does the diurnal temperature range differ between the ocean, desert, and dry land?
5. What is the difference between relative humidity and dew point?
6. What is a cloud and how do they form? Include detail for full credit.
7. What are the main four types of air masses that affect weather in the US and where to they originate (come from)?
8. What is an air mass? What is a front?
9. What determines what *type* of front will form along a given boundary between air masses?
10. What does the profile of a cold front look like? A warm front? How does the weather along each front differ and why?
11. How do radar and satellite instruments provide valuable information to meteorologists? How does each one operate?
12. Why can we not forecast the weather for a month from now?
13. What is the difference between a severe weather *watch* and a *warning*?
14. What should you do if you are threatened by a tornado and you are traveling in a car?
15. Fully describe the viewpoints of the “alarmist” and the “skeptic” in the climate change debate (a venn diagram might work well here).