Earth Science Review Guide — Second (Spring) Semester

What follows is a list of the major ideas that we studied in second semester Earth Science.
The suggested way to use this list is to first read all of the objectives and look over the list of earth science terms. As you read them, **highlight those that seem difficult**. Spend little time with the objectives that you know, but return to the textbook to review the more difficult ones until you are comfortable with the information. You are welcome to come in to ask for help with the content before and after school. The final exam was created with this list of objectives in mind.

CHAPTER 1 INTRODUCTION TO EARTH SCIENCE

1. Earth Science Branches and the Scientific Method
   - Identify the branches of Earth Science, topics studied in each branch, and careers that relate to the branches.
   - Recognize the components of the scientific method used in a science investigation.
2. Measurements
   - Be able to use the metric system and do conversions. (Page 741)
3. Safety
   - Recognize safe and unsafe laboratory procedures when working alone or in groups. (Pages 732-733)

Geology	Scientific Method	Metric System	Longitude
Oceanography	Data	Meter	Latitude
Hydrology	Hypothesis	Liter	
Astronomy	Experiment	Kilogram	
Meteorology	Variable	Light Year	
Hydrosphere	Control	Volume	
Atmosphere	Conclusion	Weight	
Geosphere	Theory	Mass	
Biosphere	Law	Density	
	Model	Celsius	

CHAPTER 6 RUNNING WATER AND GROUNDWATER

1. Water beneath the surface
   - Understand how water moves and is stored underground.
   - How is water taken up out of the ground for human use?
2. Freshwater
   - How are freshwater reserves threatened by human pollution?

Water cycle	Aquifer	Permeability	Well
Transpiration	Groundwater	Spring	Artesian Well

CHAPTER 17 THE ATMOSPHERE

1. Layers of the Atmosphere
   - Understand the properties of the layers and how they differ from each other.
   - What gasses are present in the atmosphere?
   - How do these gasses influence the weather and climate of the earth?
2. Heating the Atmosphere
   - What causes the atmosphere to heat up and cool down?
   - Lab: “Which gets hotter, Land or Water?”

Ozone	Thermosphere	Spring Equinox	Convection	Albedo
Troposphere	Summer Solstice	Heat	Radiation	Isotherm
Stratosphere	Winter Solstice	Temperature	Reflection	
Mesosphere	Autumnal Equinox	Conduction	Greenhouse Effect	

CHAPTER 18 MOISTURE, CLOUDS, PRECIPITATION

1. Water cycle
   - Know the different phases of water and what causes changes between the phases.
2. Energy transfer
   - What is the difference between radiation, conduction, and convection?
3. Clouds
   - What are the different cloud types?

- What do the different cloud types tell us about the current weather? Or the future weather (forecast)?

Precipitation	Sublimation	Orographic lifting	Cumulus
Evaporation	Deposition	Front	Stratus
Condensation	Humidity	Cirrus	Temperature Inversion

CHAPTER 19 AIR PRESSURE AND WIND

1. Understanding Air Pressure
    - How do air masses move across the United States? (p534)
    - What type of weather is associated with High Pressure? Low Pressure?
2. Wind
    - What causes wind?
    - What causes different areas of air pressure near the surface of the earth?

Air Pressure	Coriolis Effect	Anticyclone	Polar Easterlies
Barometer	Jet Stream	Trade Winds	Prevailing Wind
Pressure Gradient	Cyclone	Westerlies	El Nino

CHAPTER 20 WEATHER PATTERNS AND WIND

1. Air Masses
    - How do air masses influence weather?
    - What effect does the sun have on air masses and wind?

Air Mass	Front	Warm Front	Cold Front

CHAPTER 21 CLIMATE

1. Factors that affect climate
    - What are the factors that affect climate locally and globally?

Greenhouse Effect	Global Warming

CHAPTER 22 ORIGIN OF MODERN ASTRONOMY

1. Sun, Earth and Moon System
    - What causes the seasons?
    - What are the two types of eclipses? What are the causes of each?
    - What causes tides?

Astronomy	Heliocentric	Revolution	Solar Eclipse
Geocentric	Rotation	Phases of the Moon	Lunar Eclipse

CHAPTER 23 TOURING OUR SOLAR SYSTEM

1. Terrestrial Planets
    - Which are they?
    - How are they different Jovian?
2. Jovian Planets
    1. Which are they?
    2. How are they different from Terrestrial?

CHAPTER 25 BEYOND OUR SOLAR SYSTEM

1. Big Bang
    - What is the Big Bang?
    - What is the evidence for the Big Bang?
2. Stars
    - What is Electromagnetic Radiation (EM)?
    - Understand how the elements are formed in stars.
    - How do we use the Hertzsprung-Russell Diagram to classify stars?

Light-year	Nebulae	Black Hole	Galaxy	Big Bang Theory

Exam Questions:

Groundwater is found underground in the zone of_____?

Most of Earth's dry air is made up of_____?

The average kinetic energy of the atoms or molecules in a particular substance is known as_____?

What are the factors that control temperature?

What eventually happens to all stars, regardless of their size?