

# Earth Science Final Exam Review

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Overview: \_\_\_\_\_

*You will be completing this Final Exam Review worksheet for several days before your final exam. The review will help guide you through the most basic information about Earth Science that we have learned this year.*

***This review is not intended to be 100% comprehensive*** – meaning that there may be questions on the test that require you to connect several ideas from the review – or questions that are asked in different ways than your review will read. Please be careful to study the biggest concepts first, and then the smaller associated ideas second.

*Some of the questions on this review will require a written answer, while some will direct you to study some concepts on your own.*

***This Final Exam Review is due on the day of the test.***

**Over-Arching Essential Questions:** *Questions that apply to many chapters.*

1. How does the Bible relate to modern science?
2. What was man's original relationship to the Earth, according to the Bible?
3. What evidences of degeneration can be seen on Earth and in the Universe as a whole?
4. How can the built-in protection systems of the Earth give evidence for design?
5. Why is the Earth a unique planet among all known planets?
6. What does the Bible say about the origin and final destiny of the Earth?
7. How does the existence of water in all three states enable Earth to support life?
8. What factors have enabled humans to investigate the distant heavens from the surface of the Earth?
9. Why is the study of the Earth and its processes important?

**Unit 1: The Celestial Sphere, Chapters 1-7**

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**Chapter 1:**

1. Name, describe, and give one evidence for each of the motions of Earth:

a. Motion: \_\_\_\_\_

\_\_\_\_\_

Evidence: \_\_\_\_\_

b. Motion: \_\_\_\_\_

\_\_\_\_\_

Evidence: \_\_\_\_\_

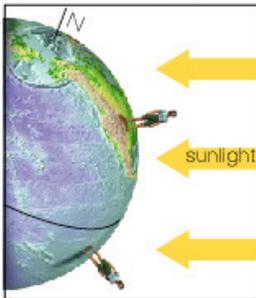
2. *Be able to contrast heliocentrism and geocentrism. Know the scientists who supported both opposing theories.*

3. At what times of year do we experience equal daytime and nighttime hours? (pg. 19)

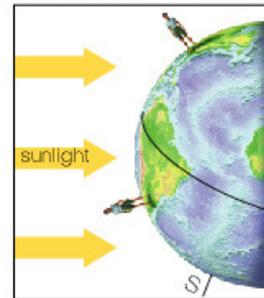
a. \_\_\_\_\_

b. \_\_\_\_\_

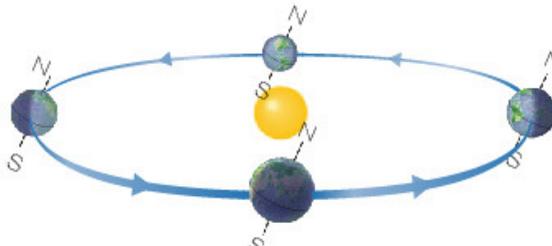
Sunlight striking the Northern Hemisphere is concentrated in a smaller area (note the smaller shadow) than the same amount of sunlight striking the Southern Hemisphere.



The situation is reversed from the summer solstice, with sunlight striking a smaller area in the Southern Hemisphere (note the smaller shadow) than in the Northern Hemisphere.



**2. Summer Solstice**  
Summer begins in the Northern Hemisphere, winter in the Southern Hemisphere.

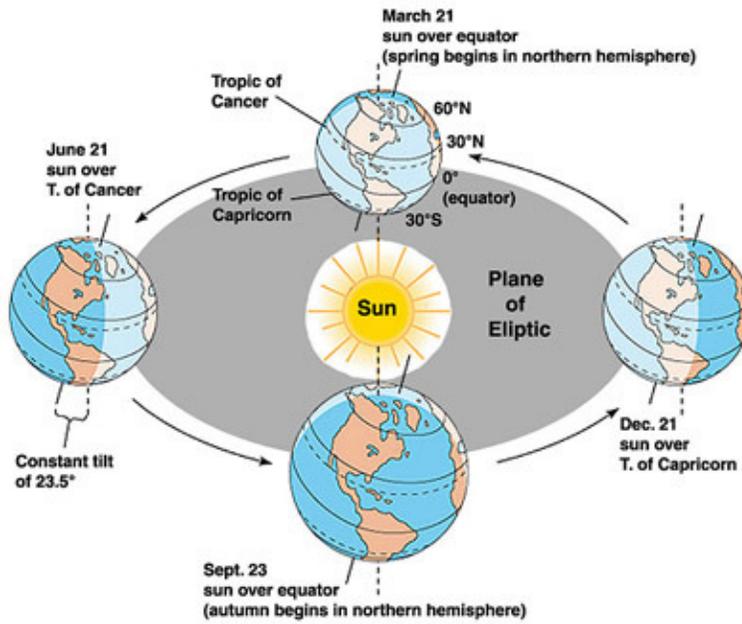


**1. Spring Equinox**  
Spring begins in the Northern Hemisphere, fall in the Southern Hemisphere.

**4. Winter Solstice**  
Winter begins in the Northern Hemisphere, summer in the Southern Hemisphere.

**3. Fall Equinox**  
Fall begins in the Northern Hemisphere, spring in the Southern Hemisphere.

4. Why does the Earth's southern hemisphere experience summer at the same time the northern hemisphere experiences winter?



5. The Earth is tilted ~ \_\_\_\_\_° on its axis.

## Chapter 2:

1. Why was Ptolemy's *Almagest* significant?

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2. Give two reasons why a knowledge of the heavens was important to ancient civilizations:

a. \_\_\_\_\_

b. \_\_\_\_\_

3. *Be able to explain why 1609 was an important year in astronomy.*

4. Which type of telescope uses only glass lenses to collect and magnify an image?

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Who was the first to use this type of telescope for astronomy?

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5. Which type of telescope uses reflective mirrors to collect and magnify images?

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Who was the first to use this type of telescope for astronomy?

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6. What is a constellation?

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7. What is the easiest way to locate a star in the sky? (pg. 43)

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8. A **light-year** is the distance light travels in a year = \_\_\_\_\_ km

9. Aside from location, name 3 other ways we can characterize stars:

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

10. How is a **galaxy** different from a **constellation**?

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11. Name your home galaxy: The \_\_\_\_\_

12. What are **nebulae**? (pg. 56)

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Swan Nebula



Eagle Nebula

### Chapter 3:

1. How does our Sun compare with other known stars?

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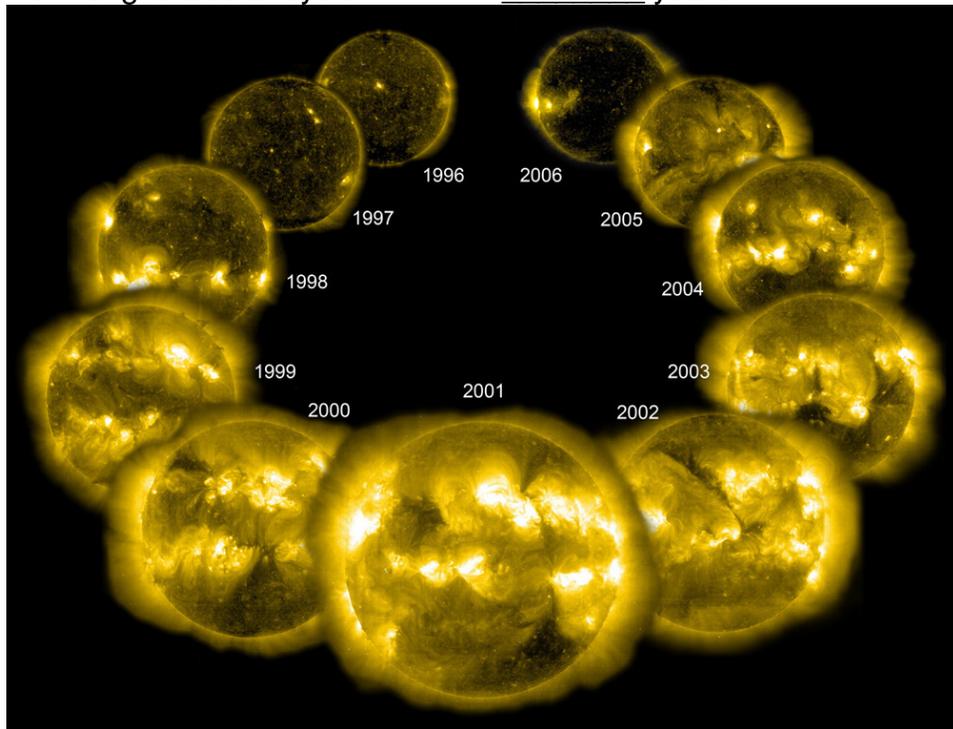
2. Most of the energy emitted from the Sun is in the form of:

\_\_\_\_\_ waves

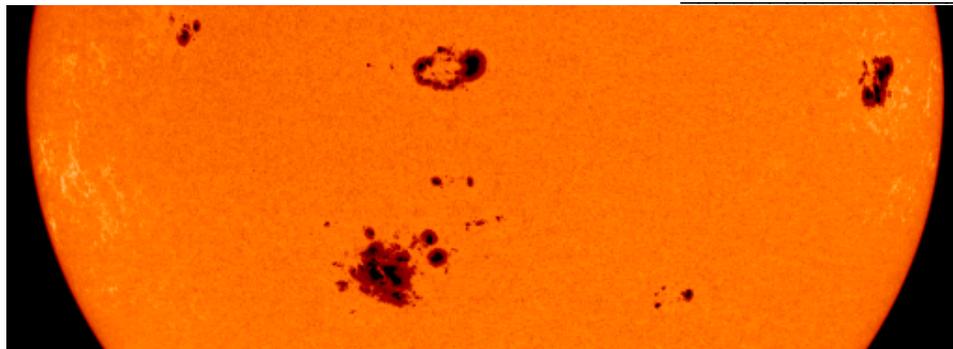
3. How is it possible to determine what our Sun and other stars are made of?

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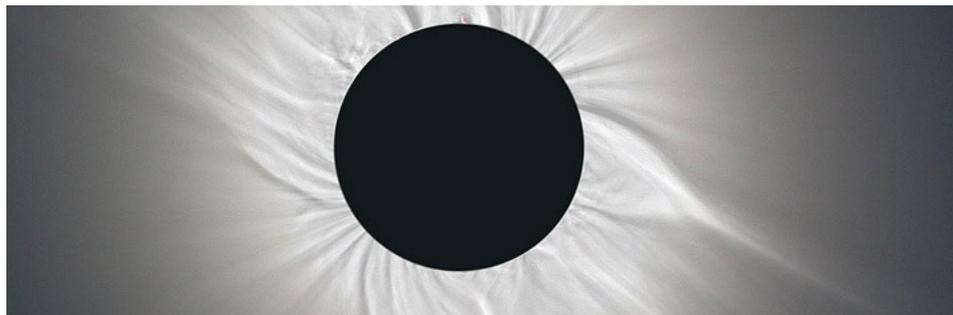
4. How long is a solar cycle? ~ \_\_\_\_\_ years



5. Dark blemishes on the Sun's surface are called \_\_\_\_\_.



6. What rare event allows scientists to see the outer atmosphere of the Sun?  
A total \_\_\_\_\_.



## Chapter 4:

Know the planets in order of their position from the Sun:

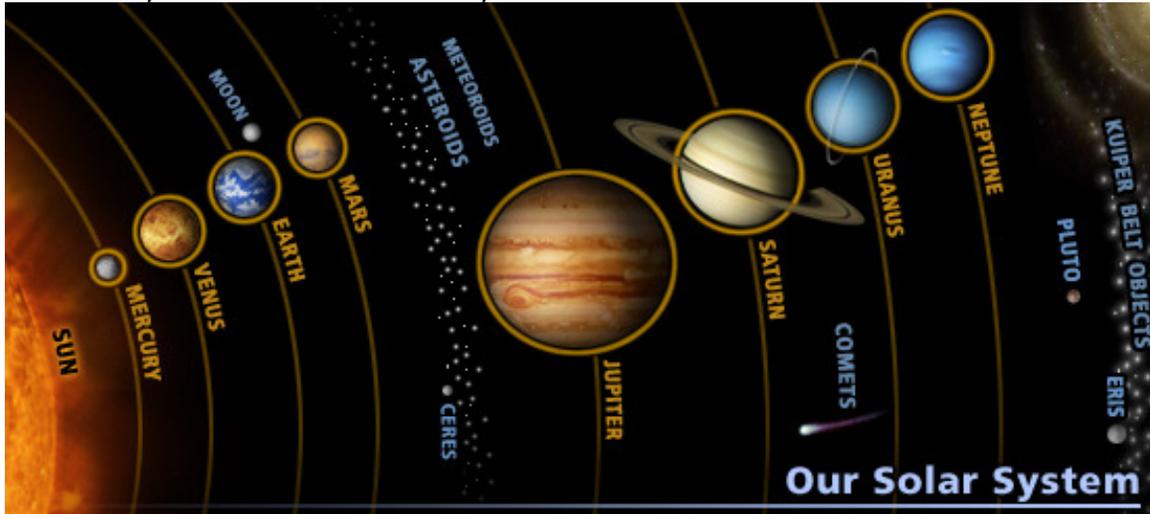


Image: [solarsystem.nasa.gov](http://solarsystem.nasa.gov)

1. What are 3 factors that affect the apparent brightness of planets as seen from Earth?
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
2. The percentage of light a planet reflects back out into space is referred to as its:  
\_\_\_\_\_
3. What is another name for planets known as “gas giants”?  
\_\_\_\_\_ planets
4. What did Galileo discover about Jupiter when using his refractor telescope in 1609?  
\_\_\_\_\_
5. Most planets follow elliptical paths around the Sun. How is an ellipse different than a perfect circle?  
\_\_\_\_\_

6. List the Terrestrial Planets:

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List the Jovian Planets:

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7. Who discovered 3 laws of planetary motion, publishing them in 1609?

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8. *Be able to distinguish between the concepts of **mass**, **density**, and **volume**.*

9. What planet is most like Earth? \_\_\_\_\_  
What prevents this planet from supporting life?

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### Chapter 5:

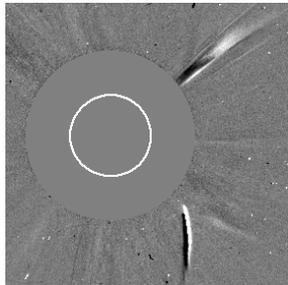
1. Know the **distinction between a major planet and minor planet.**

2. How are comets evidence of *degeneration* in our universe? (pg. 110)

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3. Why do comet tails always point away from the Sun?

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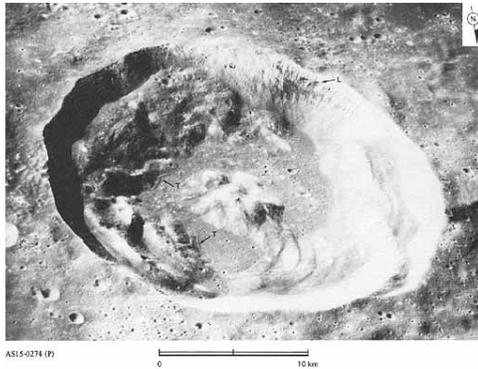
## Chapter 6:

1. Be able to list ways **that the moon benefits inhabitants of the Earth.**
2. Be able to **distinguish between weight & mass.**
3. Why is the force of gravity at the moon's surface *less than* the force of gravity at the surface of the Earth?

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4. Round impression pits on the moon's surface are called \_\_\_\_\_.



5. What is the most important reason the moon has so many craters, while Earth has very few?

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6. Huge flat, dark areas on the moon's surface are referred to as "seas" or:

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7. At what phase of the moon's orbit around Earth is a *lunar* eclipse possible? (pg. 135)

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## Chapter 7:

1. What is the name of the **first satellite** ever launched into space (on October 4<sup>th</sup>, 1957)? (pg. 143)

\_\_\_\_\_

2. What U.S. space mission was the **first to land humans on the surface of the moon**? (pg. 155, 157)

Apollo \_\_\_\_\_

**Important Scriptures:** (*Read by astronaut Buzz Aldrin aboard Apollo 11, 1969*)

### Psalm 8:3-6

NKJV

“When I consider Your heavens, the work of Your fingers,  
The moon and the stars, which You have ordained,

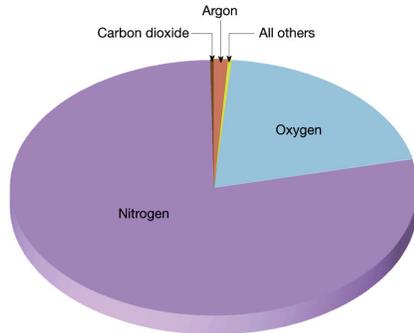
What is man that You are mindful of him,  
And the son of man that You visit him?

For You have made him a little lower than the angels,  
And You have crowned him with glory and honor.

You have made him to have dominion over the works of  
Your hands; You have put all [things] under his feet,”

## Chapter 8:

1. Know the basic % **composition of Earth's atmosphere** by gas type.



2. How do the Ozone Layer (pg. 173) and the Magnetosphere (pg. 175) protect us?

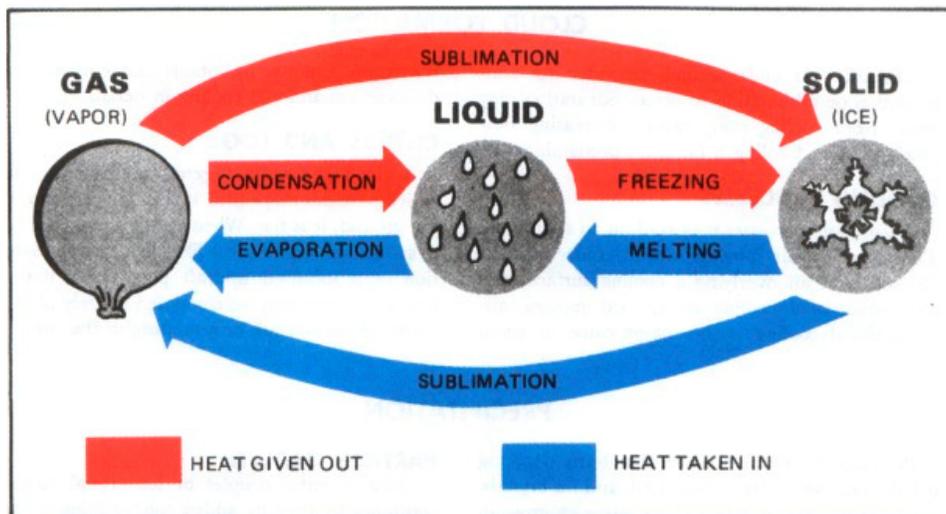
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3. \_\_\_\_\_ is the study of the atmosphere and weather.
4. Know the basic meaning of the terms **temperature**, **pressure**, and **humidity**.

## Chapter 9:

1. Know the basic **changes-of-state of water** as it enters and exits the atmosphere.



2. \_\_\_\_\_ clouds often bring thunderstorms.
3. Rain, hail, sleet, and snow are all forms of \_\_\_\_\_.

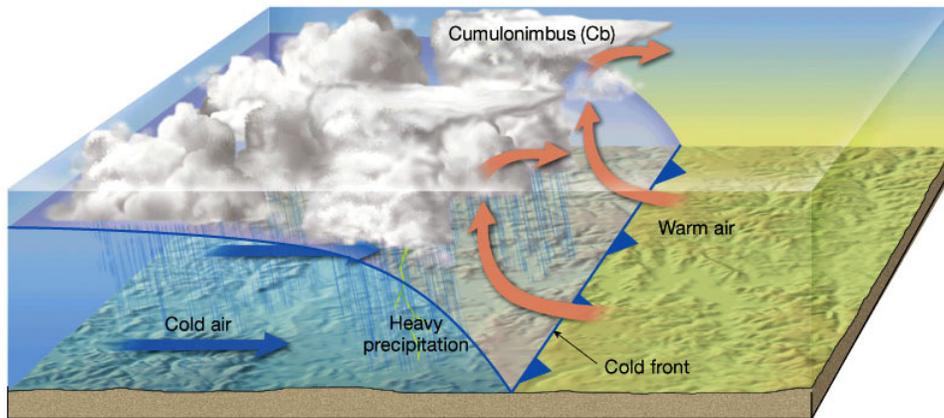
**Chapter 10:**

1. What might happen when a cold air mass collides with a warmer air mass? *Be specific!*

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2. A \_\_\_\_\_ is the boundary between two air masses.
3. What is the chief cause of wind on Earth?

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4. What is the general direction that weather moves in the United States? (pg. 206)

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5. The region of no lateral winds known as the “doldrums” exists at 0° latitude, a line on Earth known as the:

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6. *Know the difference between tornadoes and hurricanes.*

## Chapter 12:

1. Know the basic differences between the Big Bang Theory and Biblical Creationist Theory about universal origins.
2. Know what was created on each day of Creation according to **Genesis 1**.
3. What are the 3 foundational events for Biblical Creationism?
  - a. \_\_\_\_\_ (**Gen. 1**)
  - b. Man's \_\_\_\_\_ & the curse. (**Gen. 3**)
  - c. The Noahic \_\_\_\_\_ (**Gen. 7**)
4. A flaw or mistake in reasoning is known as a \_\_\_\_\_.

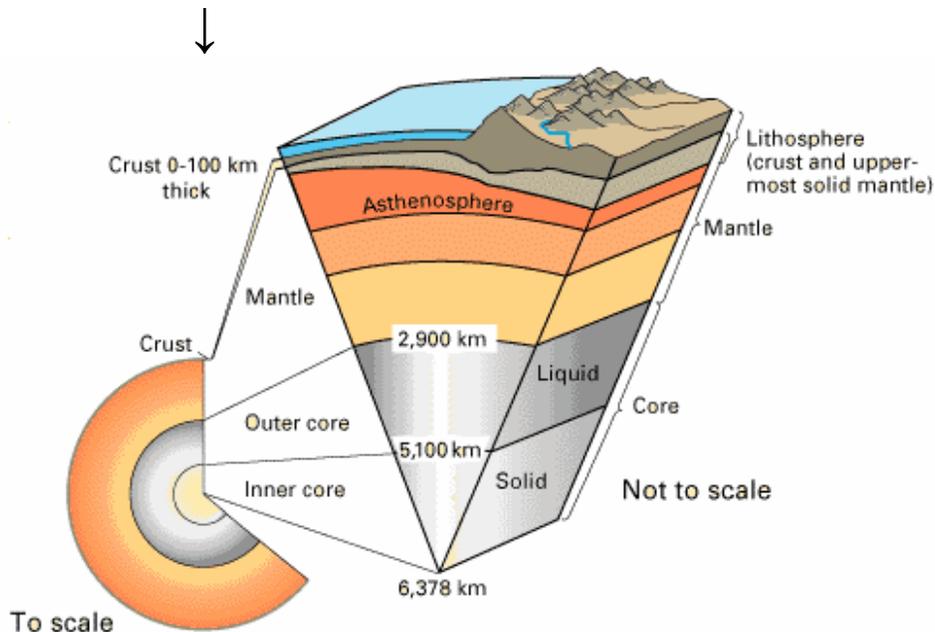
## Chapter 13:

1. What are some practical applications of the science of **geology**?  
(pg. 254)

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2. Know the 4 basic layers of the Earth (not including its atmosphere):



3. Most Biblical Creationists believe that God created Earth and its contents in a state of **maturity** in Genesis 1. Give some examples of things that were necessary to be made in a mature (adult) form at Creation: (see pgs. 260-262)

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#### Chapter 14:

1. *Be able to compare and contrast **minerals** and **rocks**.*
2. *Be able to cite some **ways you could identify minerals** found in nature.*
3. What is the hardest mineral on the Mohs hardness scale? \_\_\_\_\_
4. What 2 factors determine the value of minerals found in nature?

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#### Chapter 15:

1. *Know the **3 basic categories of rocks**.*
2. Fossils are usually found in this type of rock, formed when dirt, silt, clay and other material falls to the bottom of a body of water:

\_\_\_\_\_ rock

3. What is unique about the igneous rock *pumice*?

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4. Fossils, such as those of trees that extend through many layers in the Earth's crust, are known as **polystrate fossils**. How can these strange fossils prove difficult to explain for evolutionists? (pg. 306)

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**Chapter 16:**

1. A group of mountains, such as the Appalachian Mountains to our west, is known as a mountain \_\_\_\_\_.
2. The tallest mountain on Earth (not including island volcanoes) is in the Himalayan mountain range. This mountain stands 8848m tall is is called:  
\_\_\_\_\_
3. *Know the 5 types of mountains* (pg. 321-330).

**Chapter 17:**

1. Plate \_\_\_\_\_ Theory asserts that the Earth's crust is made up of large solid plates.
2. *Know what an **earthquake** is.*
3. What Pacific rim country experienced a major, devastating earthquake in 2011?  
\_\_\_\_\_
4. Why are Japan, Alaska, and California prone to earthquakes?  
\_\_\_\_\_
5. *Know what can come out of a **volcano** (why they are so dangerous).*

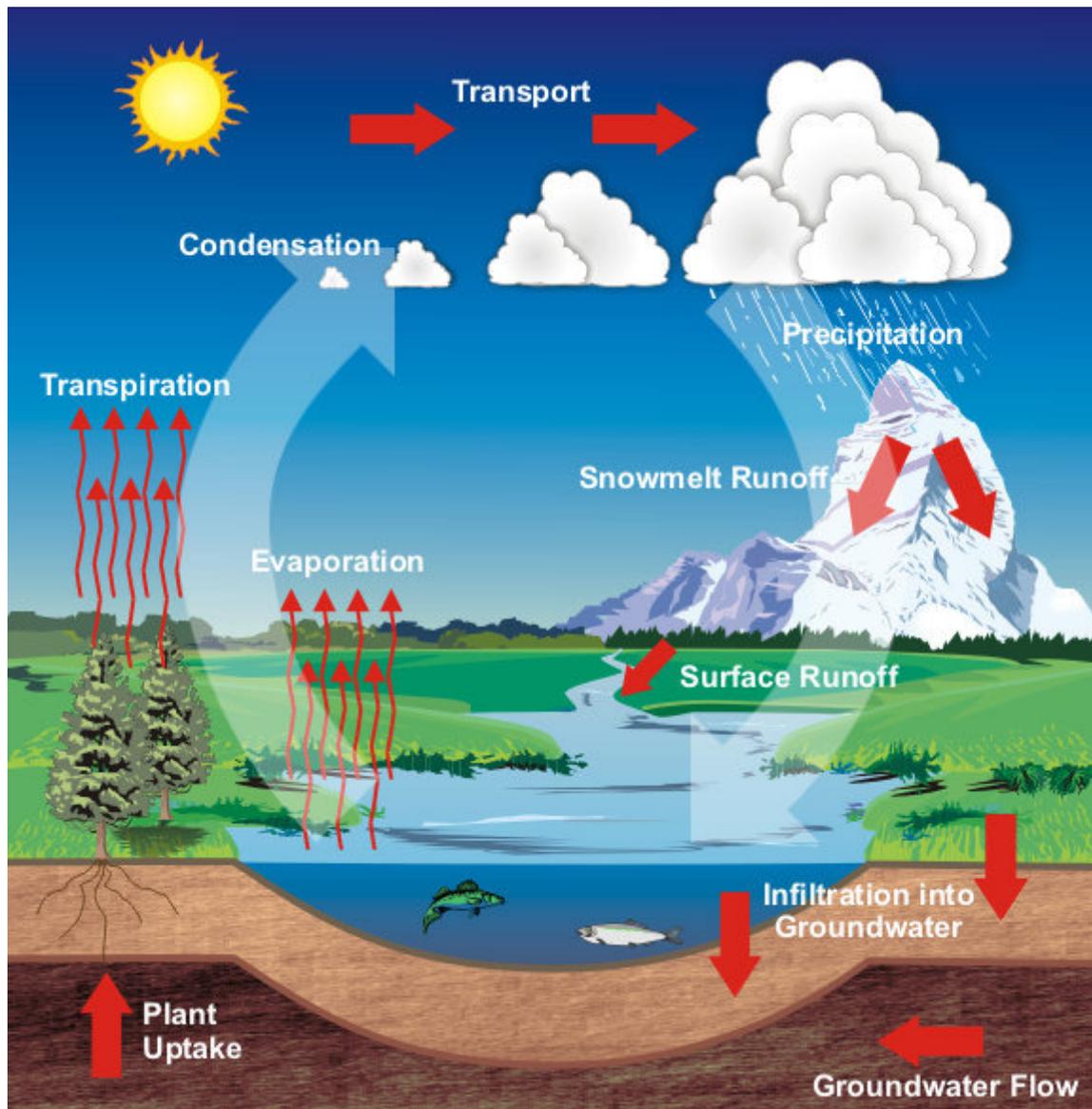
**Chapter 18:**

1. Know the following terms from this chapter:  
Talus: \_\_\_\_\_  
Landslide: \_\_\_\_\_  
Erosion: \_\_\_\_\_

## Chapter 19:

1. Know that both the Sun and our moon can affect tides on Earth.
2. Know that the ocean floor has complex topography just like dry land.

## Water Cycle:



Hi 8<sup>th</sup> Grade Scientists,

*It has been my pleasure to teach you a bit of Earth Science each day. You have grown this year in understanding this topic, and you have a lifetime on your own to apply what you've learned – then to dive even deeper into the beauty and mystery of science. Love ya! Mr. Janssen*