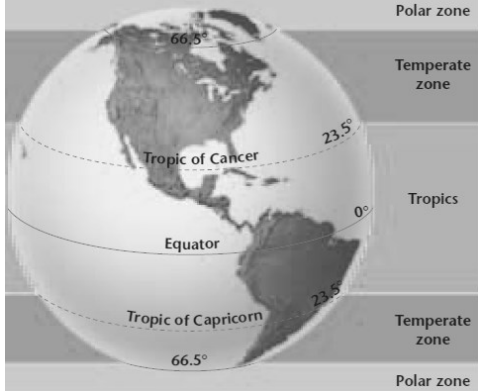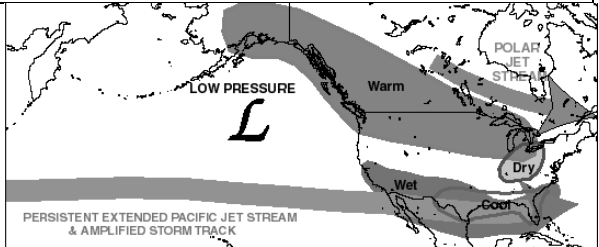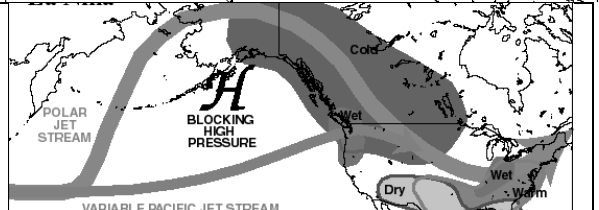# Earth/Environmental Science Homework & Test Review

Week 1: March 30th – April 3rd, 2015
DUE DATE: Friday, April 3rd

Vocabulary: Fill in the missing areas on the table below using your textbook, class activities and any other resources you find helpful.

Vocabulary Word	Definition	Example/Application/Diagram
Climate	**Average weather of a particular area over a long period of time**	**Describes annual temperature, precipitation and other variables**
Normals (as it pertains to climate)	**Standard values for a location, including rainfall, wind speed, and temperatures based on long-term records**	*See Research Question for the Week (2nd Page of Homework)*
Tropics	**Earth area that receives the most solar radiation, generally warm year round, between 23.5° S & N of equator.**	
Temperate Zones	**Earth area between 23.5° and 66.5° S & N of the equator, moderate temperatures.**	
Polar Zones	**Earth area where solar radiation strikes at a low angle, temperatures nearly always cold, extend from 66.5° S & N of equator to poles**	
Köppen Classification System	**Divides climates into types based on the mean monthly values of temperature and precipitation and types of vegetation**	**North Carolina has a mild climate designated as humid subtropical**
Microclimate	**A localized climate that differs from the main regional climate**	**The top of a mountain since it is colder with increasing elevation**
Heat Islands	**Urban area where climate is warmer than nearby countryside due to factors such as lots of concrete and asphalt structures**	**Urban areas have warmer temperatures than rural areas**
El Nino	**Warm ocean current that develops off the west coast of South America, occurs every 2 to 7 years**	
La Nina	**Cooling of the ocean surface off the west coast of South America, occurs every 4 to 12 years**	

Key Questions from the Week: Answer the questions below pertaining to this week.

1. What is the difference between weather and climate?

    Weather reflects short-term conditions of the atmosphere while climate is the average daily weather for an extended period of time at a certain location.

2. What are seven reasons for the variety of climates across our planet? (pg. 361 – 363 of textbook)

1. **Latitude**	5. **Global wind patterns**
2. **Topography**	6. **Ocean currents**
3. **Closeness of lakes and oceans**	7. **Air masses**
4. **Availability of moisture**	

3. How long ago was the last ice age on Earth?

10,000 years ago

4. Describe how each of the following causes a climatic change on the earth:

El Nino/La Nina   **Cause: Unknown**   **Effect: El Nino, short-term warming. La Nina, short-term cooling**
Volcanic eruptions   **Cause: Volcanic dust can remain suspended in the atmosphere for several years**   **Effect: Blocks incoming solar radiation and lowers global temperatures**
Sunspots   **Cause: Cooler areas on the sun are known as sunspots**   **Effect: Low number of sunspots relate to colder winters; High number relate to warmer winters**
Shifts in Earth's orbit   **Cause: Changes to more elliptical then to more circular and back in a 100,000 year cycle**   **Effect: Elliptical – Warmer   Circular - Colder**

Matching: The first level of the Köppen Classification System recognizes six major climatic types with each group designated by a capital letter. Match the name of the major climatic type by placing its symbol with the correct description.

Word Bank		
Tropical Moist Climates (A)	Dry Climates (B)	Moist Mid-latitude Climates with Mild Winters (C)
Moist Mid-latitude climates with Cold Winters (D)	Polar Climates (E)	Highland Climates (H)

C	In these climates, summer temperatures are warm to hot and winters are mild. The primary distinguishing characteristic of these climates is the coldest month has an average temperature between 18°C (64°F) and -3°C (27°F).
E	These climates have very cold winters and summers, with no real summer season. The primary distinguishing characteristic of these climates is the warmest month has an average temperature below 10°C (50°F).
A	These are very warm climates found in the tropics that experience high quantities of precipitation. The primary distinguishing characteristic of these climates is all months have average temperatures above 18°C (64°F).
H	These are climates that are strongly influenced by the effects of altitude. As a result, the climate of such locations is rather different from places with low elevations at similar latitudes.
B	These are climates that experience little precipitation during most of the year. Further, potential losses of water from evaporation and transpiration greatly exceed atmospheric input.
D	In these climates, summer temperatures are warm and winters are cold. The primary distinguishing characteristic of these climates is the average temperature of warmest month exceeds 10°C (50°F), and average temperature of coldest is below -3°C (27°F).

Research Question for the Week: Answer the research question using the library and/or internet resources

What are the monthly normals for Raleigh-Durham, NC in April?

Helpful Resource: https://weatherspark.com/#!dashboard;a=USA/NC/Durham adjust view under "Graphs"

High Temperature	**71 F**		Precipitation	**3.43 inches**		Wind Speed & Direction	**7.8mph West**
Low Temperature	**46 F**		Air Pressure	**30.02 inches of Hg**		Relative Humidity	**65%**