Topic: The sun - Our heat source Name_____

1. Explain how the earth is heated and why the equatorial regions are warmer than the polar regions.

2. Which heat and cool faster, oceans or land masses? Explain why.

3. How does **lapse rate** affect temperature?

4. How does **aspect** affect temperature?

5. Why don't equatorial regions have distinct summer and winter seasons?

6. Name 2 warm ocean currents. Explain how they affect temperatures on land in coastal areas.

7. What causes cities to be hotter than surrounding areas?

Unit 3: Weather and Climate Quiz

Topic: The Sun - our heat source Name _____

1. _____ refers to the percentage of solar radiation reflected back into space.

2. Ocean currents distribute much heat from warmer equatorial regions to cooler polar regions. Name one other way that heat is distributed around our planet?

_____

_____

3. The burning of fossil fuels has increased the level of _____ (type of gas) in the atmosphere to the highest level in over 400,000 yrs.

4. What effect has an increase of the above gas had on our planet?

_____

_____

5. Give two reasons why the polar regions on earth are cooler than areas near the equator.

_____

_____

6. Define insolation. _____

Topic: El Niño **Name**_____

1. El Niño is not yet fully understood, but is brought on by a weakening of the _____ winds that blow at the equator.

2. Explain why the waters off the west coast of both North and South America are normally rich in fish.

3. How does El Niño affect the fishes and marine mammals of the Humboldt Current?

4. How does El Niño affect weather in coastal British Columbia?

5. How does El Niño affect weather in eastern North America?

6. How does El Niño affect Australia?

Topic: La Niña **Name**_____

1. During a La Niña year, how are weather conditions different from El Niño conditions?

_____

_____

2. During El Niño conditions, the polar jet stream shifts into Canada's far north. What happens to the polar jet stream during the La Niña weather pattern?

_____

_____

How does this change North American weather?

_____

_____

3. Why does more rain fall in Southeast Asia and in the southwestern Pacific Ocean during La Niña years?

_____

_____

_____

_____

4. Like El Niño, the weather conditions resulting from La Niña peak during the months of _____ to _____ which is winter in the _____ hemisphere and summer in the _____ hemisphere.

Unit 3: Weather and Climate Quiz

Topic: El Niño (El Niño Southern Oscillation - ENSO) (A) **Name** _____

1. The impacts of El Niño are felt worldwide. State 2 ways that El Niño impacts Canada.

_____

_____

2. The coastline of Peru and Chile is one of the richest fishing grounds on earth during the absence of El Niño. Explain why the fishing is so poor during El Niño events.

_____

_____

_____

_____

3. How are the desert regions of Southwest United States impacted by El Niño.

_____

_____

_____

_____

4. The polar jet stream has a profound effect on the weather patterns of North America. How does El Niño alter the path of the jet stream during winter months in North America?

_____

_____

5. El Niño episodes have certainly increased in number during the past several decades and scientists think it could even become an annual event in the future. Even though it is not 100% certain as to why the El Niño forms, what is the most likely reason that El Niño events take place?

_____

_____

6. How does a strong El Niño impact the migration of wildlife in Africa's plains region?

_____

_____

_____

7. There are years when normal ocean and atmospheric conditions, he opposite of El Niño, persist in the equatorial Pacific Ocean. This phenomenon is referred to as _____.

Topic: El Niño (B) **Name** _____

1. The impacts of El Niño are felt worldwide. State 2 ways that El Niño impacts the Pacific Northwest .

_____

_____

2. How are tropical coral reefs affected by El Niño conditions?

_____

_____

3. Meteorologists have noticed that during an El Niño, there are fewer Atlantic hurricanes and more wind shear. How does wind shear affect the development of cumulonimbus clouds in the Caribbean region?

_____

_____

_____

4. El Niño episodes have certainly increased in number during the past several decades and scientists think it could even become an annual event in the future. Even though they are not 100% certain as to why an El Niño forms, what is believed to be the most likely reason that El Niño events take place?

_____

_____

5. How does a strong El Niño impact the millions of sea lions and seabirds along the Pacific Coast of Peru and Chile?

_____

_____

_____

_____

6. How do scientists know that the El Niño is ending and the opposite, called _____, is going to begin?

_____

_____