

# Topic 6 Summary

## Insolation and the Seasons

### **Vocabulary**

Angle of incidence  
Deforestation  
El Nino  
Global warming

Greenhouse gases  
Heat budget  
Ice ages  
Insolation

Ozone  
Sunspot  
Transpiration

### **Solar Radiation and Insolation**

Effects of Earth's Atmosphere on Insolation

Absorption of UV and IR

Reflection and Scattering

Balance of Energy from Insolation and Earth's Surface Radiation

Factors Affecting Absorption and Reflection

Angle of Incidence

Surface Characteristics

Change of State and Transpiration

Land and Water Heating

# The Greenhouse Effect

## **Variation of Insolation**

Variation in Intensity and Angle of Insolation

Effect of Earth's Shape and Thickness of Atmosphere

Effect of Latitude

Effect of Seasonal Changes

Effect of Time of Day

Variation in Duration of Insolation

Effects of Latitude and Season

Relationship of Surface Temperatures to Insolation

Times of Yearly Maximum and Minimum Temperatures

Times of Daily Max and Min Temperatures

## **Heat Budget and Climate Change**

## Examples of Climate Change

Ice Ages and Warm Periods

El Nino and La Nina Events

Global Warming and Heat Waves

## Causes of Heat Budget Shifts

Changes in Solar Energy

Changes in Earth's Orbit and Axis Tilt

Volcanic Eruptions and Climate Changes

Human Causes

## Seasons

### Direct Causes of the Seasons

### Astronomical Causes of the Seasons

Tilt of Earth's Axis

Parallelism of Earth's Axis

Revolution of Earth Around the Sun

Small Seasonal Effect of Earth's Elliptical Orbit