

Name _____

period _____

Date _____

Write your notes
about what you are
reading in this space.

Science Shorts -8

World Climatic Regions

Have you ever wondered why one area of the world is a desert, another a grassland and another a rainforest? Why are there different forests and deserts, and why there are different types of life in each area? The answer is climate.

Climate is the characteristic condition of the atmosphere near the earth's surface at a certain place on earth. It is the long-term weather of that area (at least 30 years). This includes the region's general pattern of weather conditions, seasons and weather extremes like hurricanes, droughts or rainy periods. Two of the most important factors determining an area's climate are air temperature and precipitation.

World biomes are controlled by climate. The climate of a region will determine what plants will grow there and what animals will inhabit it. All three components, climate, plants and animals are interwoven to create the fabric of a biome.

Why are climates different? The sun's rays hit the equator at a direct angle between 23°N and 23°S latitude.

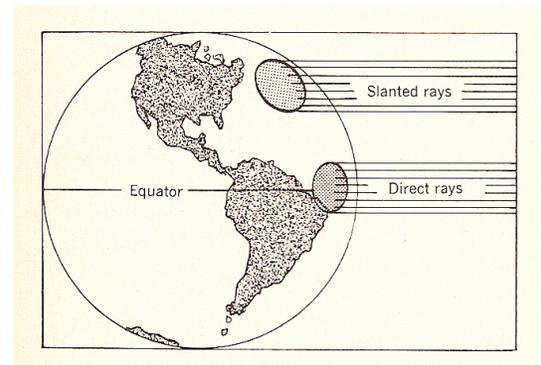
Radiation that reaches the atmosphere here is at its most intense. These are the direct rays of the sun.

In all other places, the rays arrive at an angle to the surface and are less intense. The closer a place is to the poles, the smaller the angle and therefore the less intense the radiation. These are the indirect rays of the sun.

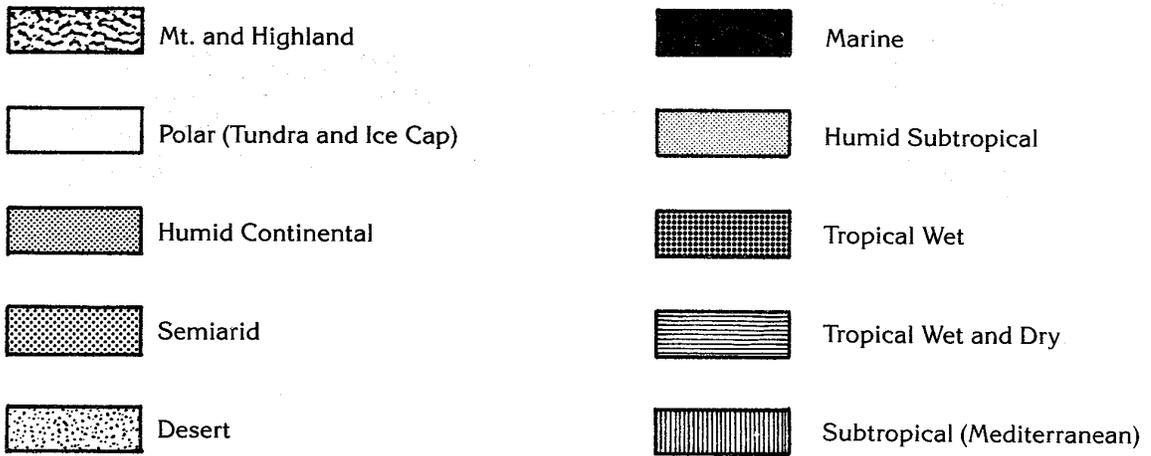
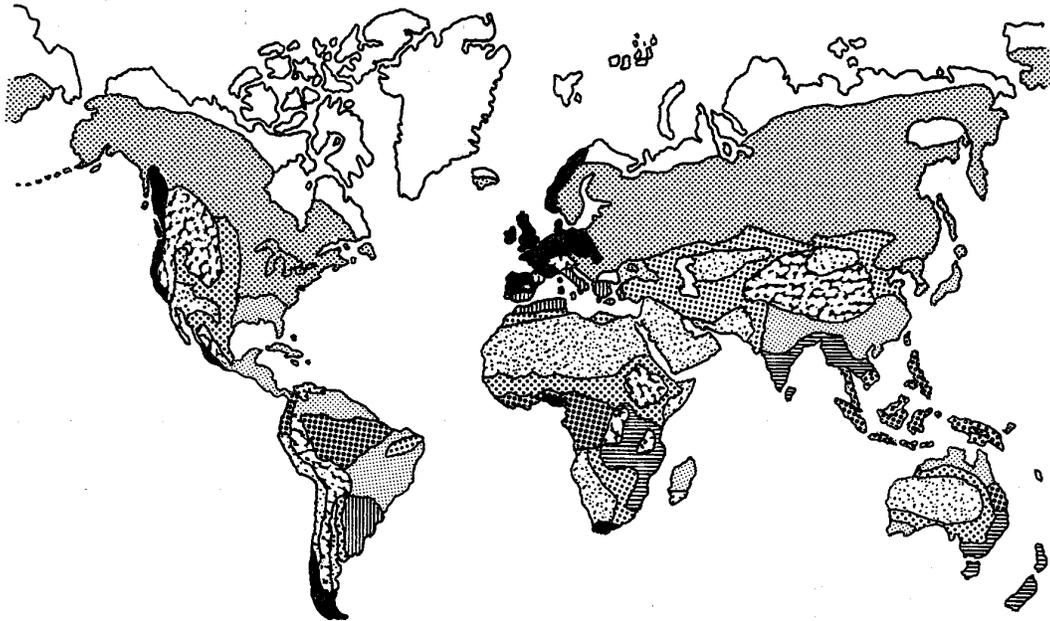
The uneven heating of the earth causes air currents. Warm air from the region around the equator expands and rises. It is replaced by heavier cold air that has moved in from the poles. As the cold air warms, it rises, and the cycle is repeated.

Areas of unequal air pressure cause winds. Air moves from high pressure regions to low pressure regions. Winds do not follow a straight path. The rotation of the earth causes their paths to curve.

Our climate system is based on the location of these hot and cold air-mass regions and the atmosphere circulation created by trade winds and westerlies.



World Climatic Regions



- Name the climatic regions found in the continental United States. _____

- What climatic regions are found in South America but not in North America? _____

- Many of the desert regions of the world are partially surrounded by _____ regions.
- Large areas of mountain climatic regions are found on which continents? _____

- Where are the tundra and ice cap areas found on this planet? _____
