

# Hot Deserts

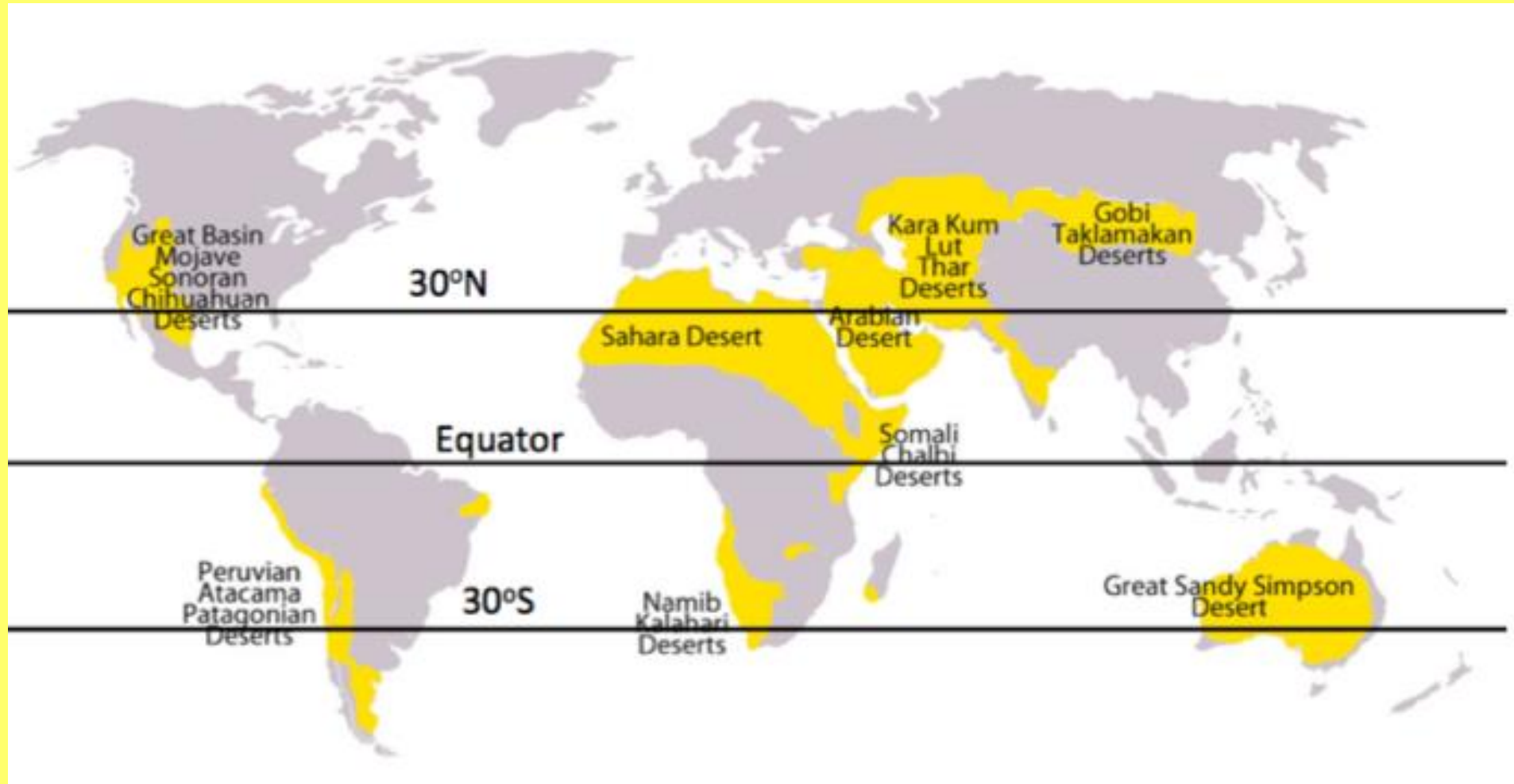
Locations and Characteristics

# Aims of today.....

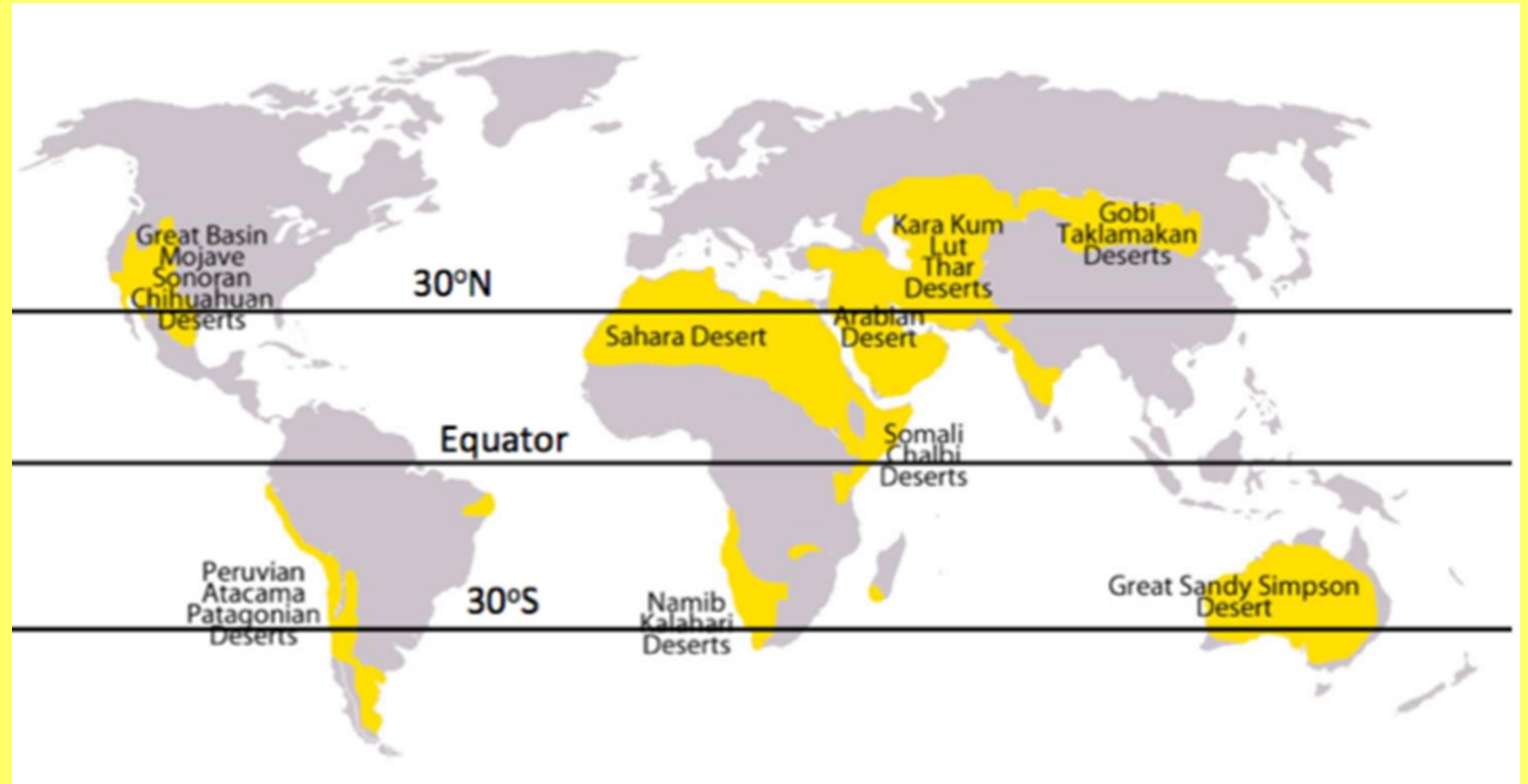
- Identify the physical characteristics of a hot desert.
- Understand the interdependence of climate, water, soils, plants, animals and people.
- Describe how plants and animals adapt to the physical conditions.
- Discuss issues related to biodiversity

# Global Distribution

5 questions.....



# Where (3) and why (3)?



# Answers - DIRT

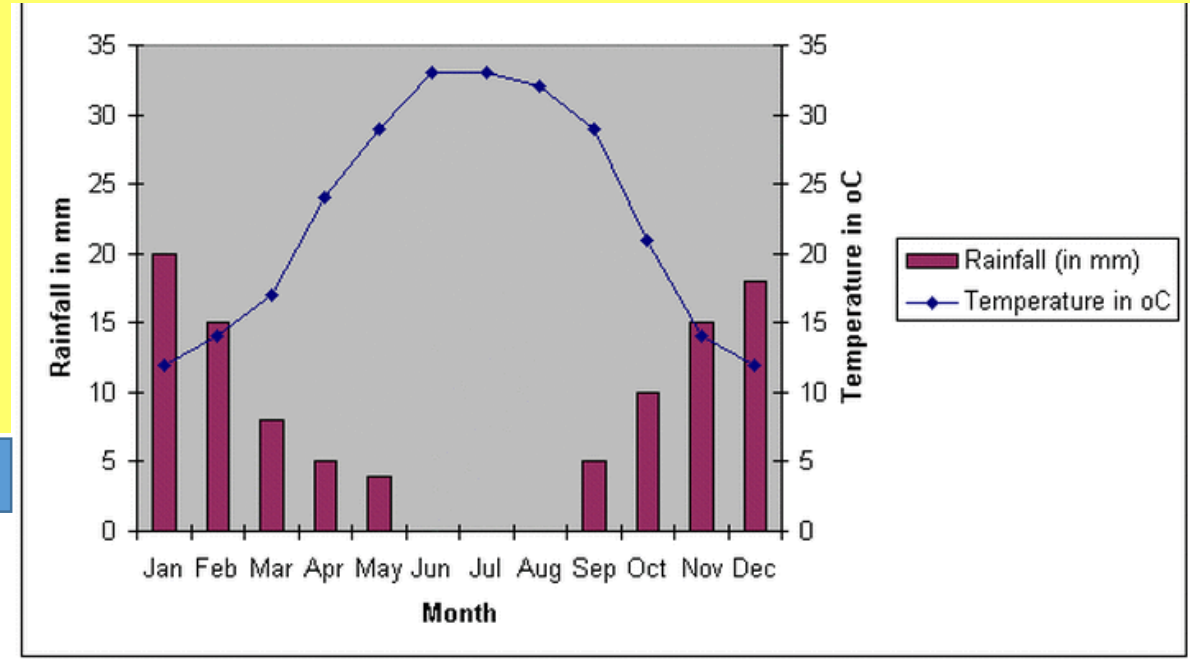
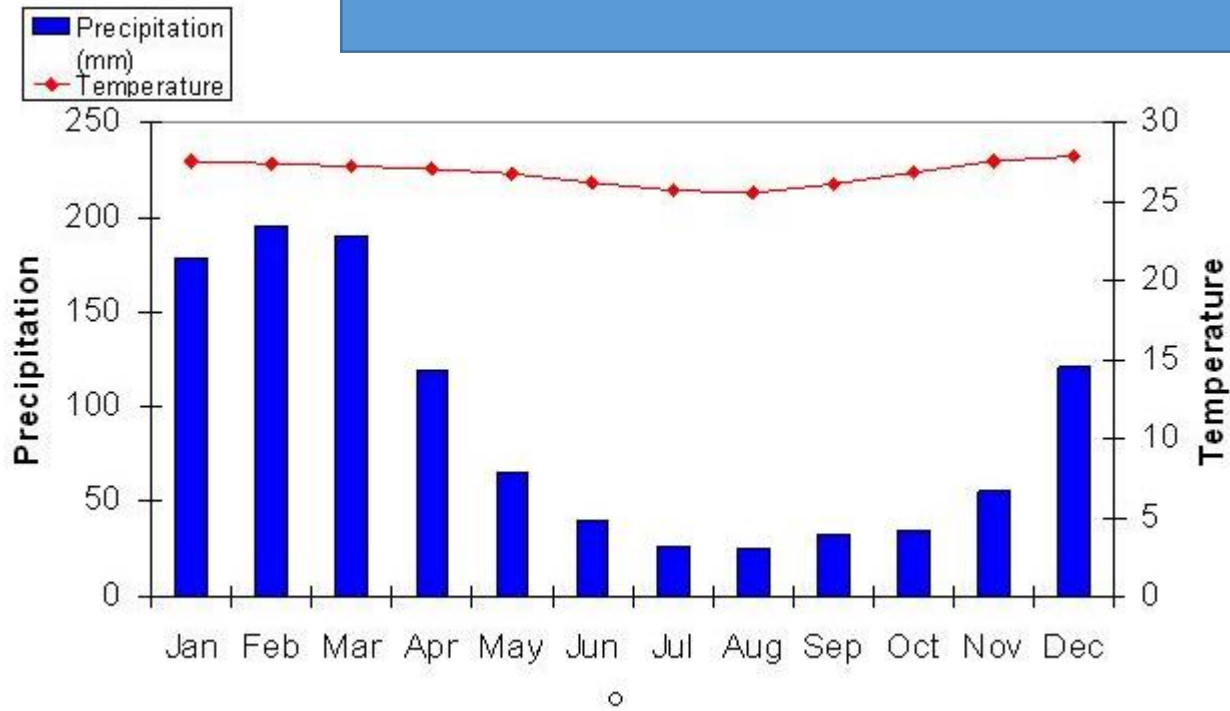
- Hot deserts are located north and south of the equator but rarely on the equator. They are on the 30 degree line north and south of the equator, which is outside of the tropics. They are on every continent except Europe and Antarctica.
- They are located here because the climate is hot and dry so little vegetation grows. Therefore there is hardly any biomass and so no real soil layer forms. The climate is hot and dry because the Hadley air cell has cold dry air sinking above the deserts. This air warms as it sinks but remains dry so there is little or no precipitation.

# Physical characteristics



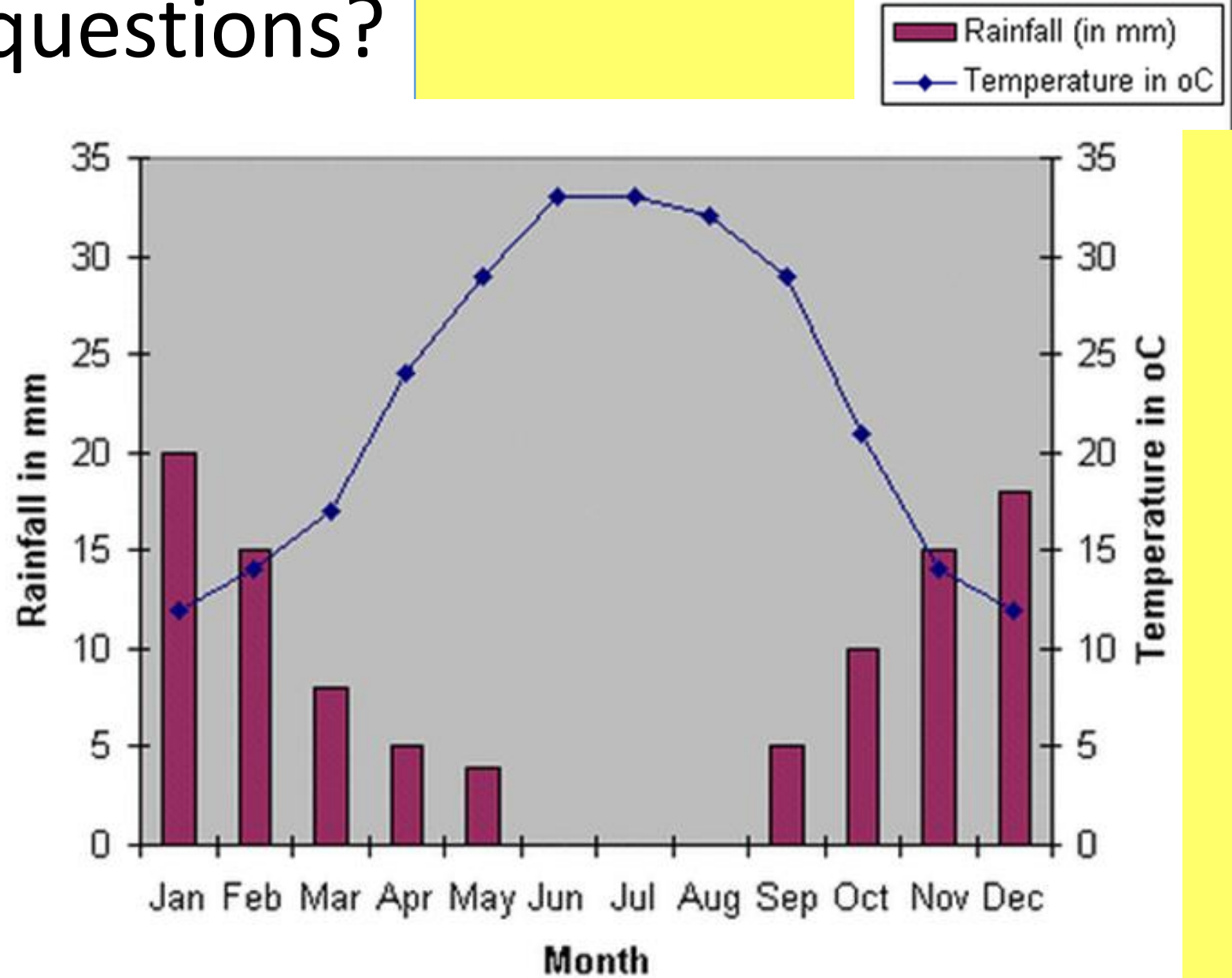
1. Hot and Dry Climate because deserts are tropical biomes, and are exposed to virtually direct sunlight.
2. Rainfall is usually very low and/or concentrated in short bursts between long rainless periods.
3. Temperatures exhibit daily extremes because the atmosphere contains little humidity to block the Sun's rays.
4. Canopy in most deserts is very rare. Plants are mainly ground-hugging shrubs and short woody trees

# Hot Desert Climate



# Can you do the questions?

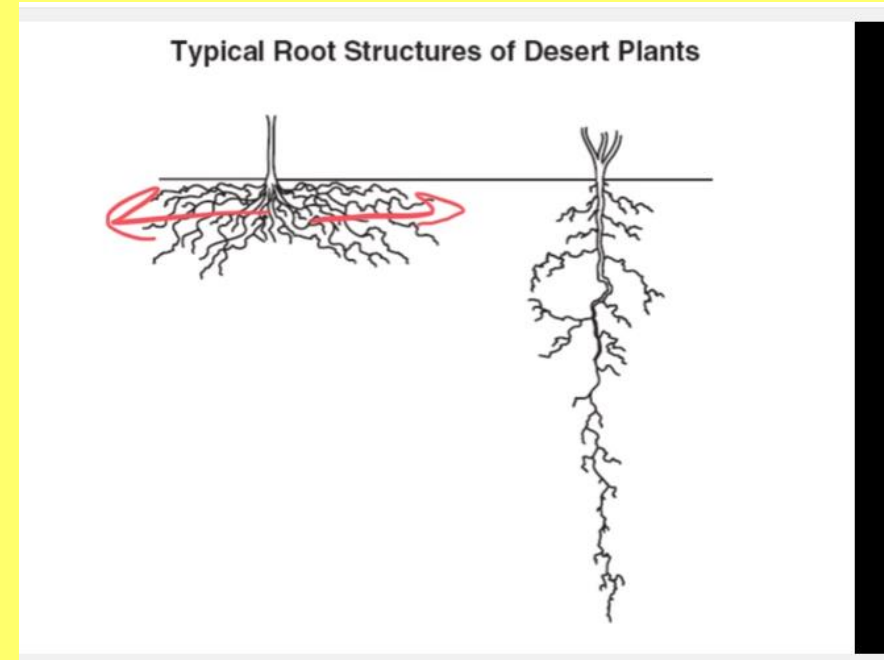
- Highest temperature
- Lowest temperature
- Month with lowest temperature
- Temperature range
- Rainfall range (mm)





# Understand the interdependence of climate, water, soils, plants, animals and people.

- Interdependence means they all rely on each other.



# Interdependence

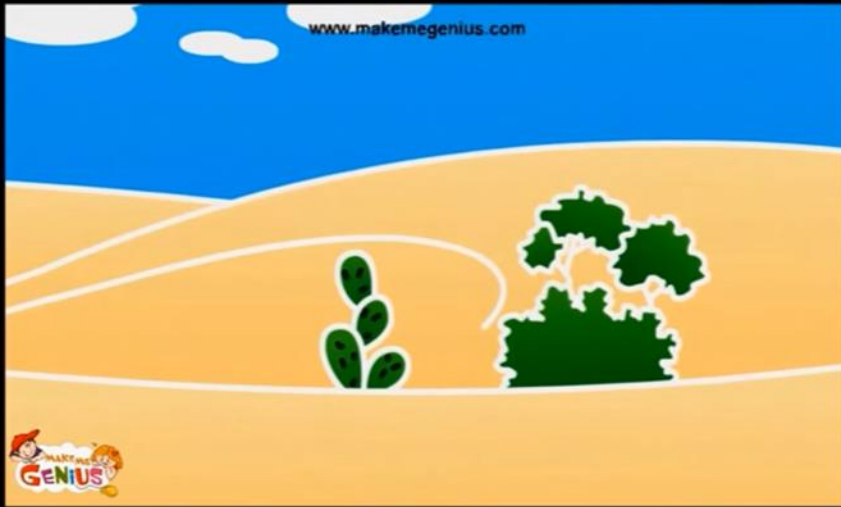
- The desert is a dry, hot, arid expanse that can stretch for thousands of miles. One of the world's six biomes, the desert is home to many plants and animals. Some deserts, such as the Sahara, are the size of large countries. Animals and plants native to the desert rely on each other for food, shelter and protection from the sun. Even in the unforgivable heat of the desert, plants and animals have found a way to adapt and thrive.
- Animals and plants could not survive in the desert without each other. The relationship between plants and animals is one of interdependence. Animals seek food and shelter through the desert plants and plants need animals to help them pollinate and grow flowers. According to Desert USA, animals are instrumental in both fertilizing and spreading plant seed throughout the desert. These animals help to maintain diverse plant life within the desert.

# Saguaro Cactus

- The saguaro cactus is a friend to many animals in the desert. Its long body stores water and many small animals find refuge in the shadow of the saguaro cacti.
- Lesser long-nosed bats help the saguaro cactus by gathering pollen from one part of the plant and pollinating another part, helping to create flowers for the saguaro cactus.
- According to the Missouri Botanical Garden website, barrel cacti store water and shrink slowly as the stored water is being used. Animals can drink from a barrel cactus only if they are small enough to fit between the plant's long, sharp needles.

# Water

- Animals native to the desert have evolved to only need small amounts of water at a time. Many animals depend on cacti and other large desert plants to provide them with water, however, some animals use the sap and nectar of desert plants to fulfill their need for water.
- According to Desert USA, some rodent species have the ability to extract water from dry plant seed. Their small bodies are equipped to manufacture the water metabolically. Even when offered water in captivity, these rodents do not drink it. They prefer to ingest water metabolically



# Plant and animal adaptations

Typical Root Structures of Desert Plants

