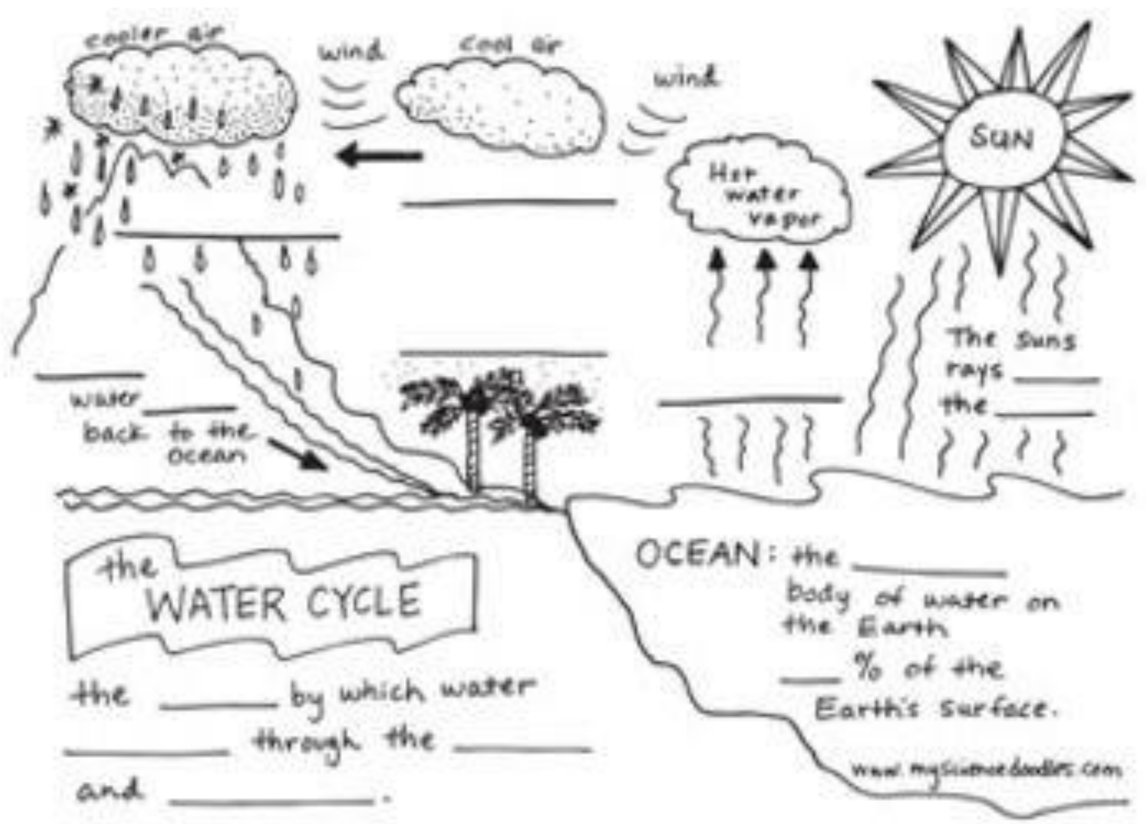
Water cycle

The **water cycle**, also known as the **hydrological cycle** or the **H_2O cycle**, describes the continuous movement of water on, above and below the surface of the Earth. The mass of water on Earth remains fairly constant over time but the partitioning of the water into the major reservoirs of ice, fresh water, saline water and atmospheric water is variable depending on a wide range of climatic variables. The water moves from one reservoir to another, such as from river to ocean, or from the ocean to the atmosphere, by the physical processes of evaporation, condensation, precipitation, infiltration, surface runoff, and subsurface flow. In doing so, the water goes through different phases: liquid, solid (ice) and vapor.

The water cycle involves the exchange of energy, which leads to temperature changes. For instance, when water evaporates, it takes up energy from its surroundings and cools the environment. When it condenses, it releases energy and warms the environment. These heat exchanges influence climate.

The evaporative phase of the cycle purifies water which then replenishes the land with freshwater. The flow of liquid water and ice transports minerals across the globe. It is also involved in reshaping the geological features of the Earth, through processes including erosion and sedimentation. The water cycle is also essential for the maintenance of most life and ecosystems on the planet.



Population:

Population death rate,**Mortality rate**, or **death rate**, is a measureof the number of deaths (in general, or due to a specific cause) in a particular population, scaled to the size of that population, per unit of time. Mortality rate is typically expressed in units of deaths per 1,000 individuals per year; thus, a mortality rate of 9.5 (out of 1,000) in a population of 1,000 would mean 9.5 deaths per year in that entire population, or 0.95% out of the total

Growth curve

S-shaped growth curve (sigmoid growth curve) A pattern of growth in which, in a new environment, the population density of an organism increases slowly initially, in a positive acceleration phase; then increases rapidly approaching an exponential growth rate as in the J-shaped curve; but then declines in a negative acceleration phase until at zero growth rate the population stabilizes. This slowing of the rate of growth reflects increasing environmental resistance which becomes proportionately more important at higher population densities. This type of population growth is termed 'densitydependent' since growth rate depends on the numbers present in the population. The point of stabilization, or zero growth rate, is termed the 'saturation value' (symbolized by *K*) or 'carrying capacity' of the environment for that organism. *K* represents the point at which the upward curve begins to level, produced when changing population numbers are plotted over time. It is usually summarized mathematically by the logistic equation.