

# Earth science class



**ASSIGN  
BUSTER**

EARTH SCIENCES & Section Number of EARTH SCIENCES: - Discuss the formation and types of fog. Fog is termed as the collection or accumulation of dewdrops (water droplets) which are present in the earth's atmosphere (Ahrens, 1991). It is important to know that fog is a typical form of a cloud but the term " Fog" is used to differentiate the thin-line difference between a cloud and a fog. A fog is a result of the water vapors accumulated from the water sources present on the ground like a lake or marsh bodies as well as the ocean which give rise to fog. In other words, they are low-lying clouds (Allred, 2009). Formation of a fog depends on the variation between temperature and dew point which should be less than 2.5 °C or 4 F (Ahrens, 1991). The formation of fog is very similar to those with a cloud. The evaporated water fuses in the atmosphere in the form of water vapors which are obtained from the local ground water sources like lakes, oceans, water streams or marshy areas. This transformation of water into water vapors from the sources results in the mixing and rise of these vapors in the air or atmosphere. Gradually and slowly, these vapors start bonding up with the small dust particles present already in the air forming the dew droplets. Further, this condensation of dew droplets causes the fog to form slightly above the ground (Miles, 2007). TYPES OF FOG: There are basically two main types of fog out of various other types that are categorized on the basis of the process of their formation. Radiation fog and Advection fog are the main types to emphasize on. 1- Radiation Fog: Clear weather and calm winds at night are the main sources behind the formation of this type of fog. Radiation fog is formed at night when heat is discharged from the Earth's surface with a unique swiftness. This heat has been entrapped during the day by the surface. It is visibly clear to see the thin layer of fog as it forms above the

ground during this cooling process of earth's surface. Sometimes the fog becomes very dense as the relative humidity reaches to 100% (Miles, 2007).

2- Advection Fog: Advection fog is the major type of fog. This type of fog is formed when moist air is passed over a cooler surface like a sea or ocean by the winds (Miles, 2007). Other Types of Fog: There are other forms of fog as well such as: 1- Upslope Fog: This type of fog is formed when air is pushed up by the wind on mountains or hills. This causes the moisture trapped in it to cool itself as it rises and eventually it condenses up forming into a dense fog (Miles, 2007). 2- Ice Fog: Ice fog normally forms in Arctic or Polar regions.

This type of fog is also known as frozen fog. For its formation, it requires a low temperature at -35 C that makes the water droplets present in the air super cooled (Miles, 2007).

- Discuss the classification of clouds. Cloud Classification: Clouds are classified into three main groups: lower, middle and high level clouds. The Lower Level Clouds: These clouds have an ever changing structure and undergo a chaotic activity in the lower parts of the earth's atmosphere. Since they are closer to the terrestrial plane, therefore they appear to move faster than the upper level clouds. They usually move in the direction of the wind, which is identical to the wind on the ground (Hamblyn, 2002). Moreover, their features are not well defined. The main types of these clouds are: Cumulus Stratocumulus Stratus Middle Level Clouds: Middle Level Clouds develop in the middle level of the earth's atmosphere. The clouds are brighter than the lower level clouds and the chaotic scenes observed in the lower level clouds are not much seen here. Moreover they have a less fragmentary appearance. Compared to the lower level clouds their speeds are below as well (Hamblyn, 2002). The main type of these clouds are: Altostratus Castellanus Floccus High Level Clouds:

High Level Clouds are formed at a cloud base that ranged between 5 and 13 km above the ground. Usually the air temperature at this level is noted less than -40 C. Therefore, it have been found out that these clouds are not made up of water droplets instead they are formed of tiny ice crystals. These clouds are either curly or like puffy balls. Sometimes these clouds also appear in thin sheets (Hancock & Skinner, 2000). The main type of these clouds are: Cirrus Cirrocumulus Cirrostratus

List Of Reference: 1- Ahrens, C. (1991). " Meteorology today: an introduction to weather, climate, and the environment". West Publications. 2- Allred, Lance (2009). " Enchanted Rock: A Natural and Human History". University of Texas Press. 3- Miles, Kathy (2007). " Just About Everything You Wanted to Know about Fog". < www. Starryskies. com> viewed on 12 June 2011. 4- Hamblyn, Richard (2002). " The Invention of Clouds - How an Amateur Meteorologist Forged the Language of the Skies Picador." Reprint edition. 5- Hancock , Paul & Skinner , Brian (2000). " Clouds. The Oxford Companion to the Earth" < http://www. encyclopedia. com/topic/cloud. aspx#1-10112: clouds-full> viewed on 12 June 2011.