

Percolation is the infiltration of water from the surface to the subsurface.

Study Guide

Chapter 10 – Fresh Water

GPS: S6E3. Students will recognize the significant role of water in Earth's processes.

a. Explain that a large portion of the Earth's surface is water, consisting of oceans, rivers, lakes, underground water, and ice.

b. Relate various atmospheric conditions to stages of the water cycle.

c. **S. Students will investigate the scientific view of how the earth's surface is formed.**

j. Describe methods for conserving natural resources such as water, soil, and air.

S6E6. Students will describe various sources of energy and with their uses and conservation.

a. Explain the role of the Sun as the major source of energy and the Sun's relationship to wind and water energy.

1. Oceans cover about 70% percent of our planet's surface which is why Earth is often called the "water planet."
2. The water cycle is the continuous process by which water moves from Earth's surface to the atmosphere and back.
3. The water cycle has three major steps - precipitation, evaporation, and condensation.
4. The cycle itself has no beginning or end and this makes the total amount of water on Earth fairly constant.
5. The cycle is driven by the energy source from the Sun.
6. In the process of evaporation, liquid water changes to a gas called water vapor.
7. Plants use water to under go photosynthesis by drawing in water from the soil and releasing water vapor through its leaves. This contribution from the plants to the water cycle is called Evaporation (more correctly – transpiration)
8. As the water vapor cools and condenses into liquid water in the clouds, a process called condensation occurs.
9. As more water vapor condenses, the drops of water in the clouds grow larger and fall back to the Earth in a process called precipitation.

The four forms of precipitation are rain, snow, sleet, and hail.

11. Most of Earth's water (97%) is salt water water and only 3% is freshwater water.
12. Of that 3% of fresh water, most of that water is tied up in ice and cannot be used.
13. The four main oceans are Pacific (largest), Atlantic (2nd largest), Indian, Arctic (smallest).
14. Water that fills the cracks and spaces in underground soil and rock layers is called groundwater.
15. The streams and smaller rivers that feed into a main river are called tributaries.
16. The land area that supplies water to a river system is called a watershed.
17. Ponds are smaller and shallower than lakes, and sunlight can usually reach to the bottom.
18. A lake that stores water for human use is called a reservoir.
19. Wetlands act as natural water filters and also help control floods by absorbing extra runoff from heavy rain.
20. Rocks and soil, like sand and gravel, that have large connected pores which **allow** water to pass through, or permeate, are known as permeable.
21. Clay and granite are impermeable which means that water **cannot** pass through easily.
22. Any underground layer of rock or sediment that holds water is called an aquifer.

Irrigation is the process of supplying water to areas of land to make them suitable for growing crops.

24. Conservation is the practice of using less of a resource so that it will not be used up – like factories when they reuse or recycle the water used to cool machinery.

25. Water pollution is the addition of any substance that has a negative effect on water or the living things that depend on the water.