

Chapter 11 – The Flow of Fresh Water

Section 1

Objectives

- **Describe** how moving water shapes the surface of the Earth by the process of erosion.
- **Explain** how water moves through the water cycle.
- **Describe** a watershed.
- **Explain** three factors that affect the rate of stream erosion.
- **Identify** four ways that rivers are described.

Rivers: Agents of Erosion

- _____ is the process by which soil and sediment are transported from one location to another.
- **What causes erosion?**
 - _____ is a major agent of erosion. Rivers often carry eroded materials long distances.

The Water Cycle

- **What Is the Water Cycle?** The water cycle is the _____ movement of Earth's water from the ocean to the atmosphere to the land and back to the ocean.
- **Powering the Water Cycle** The water cycle is driven by _____ from the _____.

River Systems

- A stream that flows into a lake or into a larger stream is called a _____.
- A _____, or drainage basin, is the area of land that is drained by a water system.

Stream Erosion

- **Gradient** - _____ is the measure of the change in _____ over a certain distance.
- **Discharge** - The amount of _____ that a stream or river carries in a given amount of time is called _____.
- **Load** - The materials carried by a stream are called the stream's _____.

The Stages of a River

- **Youthful Rivers** - A _____ river erodes its channel _____ rather than wider.
- **Mature Rivers** - A _____ river erodes its channel _____ rather than deeper.
- **Old** - An _____ river has a low gradient and little _____.
- **Rejuvenated Rivers** - Rejuvenated rivers are found where the land is raised by _____ activity.

Section 2

Objectives

- **Describe** the four different types of stream deposits.
- **Describe** how the deposition of sediment affects the land.

Deposition in Water

- **Placer Deposit** - _____ are sometimes deposited at places in a river where the

current slows down. This kind of sediment is called a _____.

- **Delta** - As its current slows, a river often deposits its load in a _____ pattern called a _____.

Deposition on Land

- **Floodplains** The area along a river that forms from sediment deposited when a river overflows its banks is called a _____.
- **Flooding Dangers** - Floods can damage property and cause a loss of lives. Dams and _____ are often used to prevent flooding.

Section 3

Objectives

- **Identify** and describe the location of the water table.
- **Describe** an aquifer.
- **Explain** the difference between a spring and a well.
- **Explain** how caves and sinkholes form as a result of erosion and deposition.

The Location of Groundwater

- **The Water Table** - The zone of _____ and the zone of _____ meet at a boundary known as the water table.

Aquifers

- **Porosity** - The percentage of _____ between individual rocks is called porosity.
- **Permeability** - A rock's ability to let water _____ is called permeability.
- **Aquifer Geology and Geography** - The best aquifers usually form in _____ materials.
- **Recharge Zones** - The ground surface where water enters an aquifer is called the _____ zone.

Springs and Wells

- **Artesian Springs** - An artesian spring is a spring whose water flows from a crack in the _____ of an aquifer.
- **Wells** - A _____-made hole that is _____ than the level of the water table is called a well.

Underground Erosion and Deposition

- **Cave Formations** - Although caves are formed by erosion, they also so signs of deposition, such as _____.
- **Sinkholes** - The roof of a cave can _____, which leaves a _____ depression called a sinkhole.

Section 4

Objectives

- **Identify** two forms of water pollution.
- **Explain** how the properties of water influence the health of a water system.

- **Describe** two ways that wastewater can be treated.
- **Describe** how water is used and how water can be conserved in industry, in agriculture, and at home.

Water Pollution

- **What Is Pollution?** - Pollution is the introduction of _____ substances into the environment.
- **Point-Source and Nonpoint-Source Pollution** - Pollution that comes from _____ site is called point-source pollution. Nonpoint-source pollution is pollution that comes from _____ sources.

Health of a Water System

- **Dissolved Oxygen** - Fish and other organisms that live in water need dissolved oxygen in the water to live.
- **Nitrates** - Elevated nitrate levels in water can be harmful to organisms because they _____ the amount of dissolved oxygen in the water.
- **Alkalinity** - Alkalinity refers to water's ability to _____ acid. Acid rain can lower water's alkalinity.

Cleaning Polluted Water

- **Primary Treatment** - In primary treatment, dirty water is passed through a large _____ to catch _____ objects.
- **Secondary Treatment** - In secondary treatment, the water is sent to an _____ tank, where it is mixed with oxygen and _____.
- **Another Way to Clean Wastewater** - A septic tank is a large _____ that cleans wastewater from a household.

Where the Water Goes

- **Water in Industry** - About _____% of water used in the world is used for industrial purposes.
- **Water in Agriculture** - Water must be used in agriculture to facilitate _____.
- **Conserving Water at Home** - Many people save water by installing _____ shower heads and low-flush toilets.