Name _____ Date _____ Class _____

Water Erosion

Guide for Reading

- What process is mainly responsible for shaping the surface of the land?
- What features are formed by water erosion and deposition?
- What causes groundwater erosion?

Moving water is the major agent of erosion that has shaped Earth's land surface. The force of a falling raindrop can loosen and pick up soil particles. As water moves over land, it carries these particles with it. This moving water is called **runoff,** which is water that moves over Earth's surface. The amount of runoff in an area depends on five main factors: amount of rain, amount of vegetation, type of soil, shape of the land, and how people use the land. As runoff travels, it forms tiny grooves in the soil called **rills.** Rills flow into one another and form larger grooves, called gullies. A **gully** is a large groove, or channel, in the soil that carries runoff after a rainstorm. Gullies join together to form streams. A **stream** is a channel along which water is continually flowing down a slope. A **tributary** is a stream that flows into a larger stream.

Through erosion, a river creates valleys, waterfalls, flood plains, meanders, and oxbow lakes. Rivers often form on mountain slopes. There, a river generally follows a straight, narrow course, creating a deep, V-shaped valley. Lower down, a river usually flows over more gently sloping land. The river spreads out, forming a wide river valley. The flat, wide area of land along a river is a **flood plain.** A **meander** is a looplike bend in the course of a river. Sometimes a meandering river forms an **oxbow lake,** a meander that has been cut off from the river.

As water moves, it carries sediment with it. Whenever moving water slows down, it deposits sediment. **Deposition creates landforms such as alluvial fans and deltas. It can also add soil to a river's flood plain.** When a river flows out of a mountain valley, the water slows down. Then sediments are deposited in an **alluvial fan,** a wide, sloping deposit formed where a stream leaves a mountain range. A river ends when it flows into a still body of water, such as an ocean or a lake. There the water slows down and deposits sediment. This sediment builds up a landform called a **delta.** Deposition also occurs during floods.

When rain falls, some water soaks into the ground, filling openings in soil and cracks in rocks. This underground water is called **groundwater**. **Groundwater can cause erosion through a process of chemical weathering.** Over time, this weathering can develop into caves or caverns and also result in deposition. A deposit that hangs like an icicle from the roof of a cave is a **stalactite.** Slow dripping can build up a cone-shaped **stalagmite** on a cave floor. In rainy regions where a layer of limestone is near the surface, groundwater can change the shape of the land. Such a landscape is called **karst topography.**