How has water shaped human settlement?

Energy Literacy Essential Principle 2:
Physical processes on Earth are the result of energy flow through the Earth system.

C3 Framework for Social Studies Focus Indicators

D1: Identify disciplinary concepts and ideas associated with a compelling question that are open to different interpretations. (D1.2.3-5)

D2: Use maps of different scales to describe the locations of cultural and environmental characteristics. (D2.Geo.3.3-5); Compare life in specific historical time periods to life today. (D2.His.2.3-5)

D3: Use evidence to develop claims in response to compelling questions. (D3.4.3-5)

D4: Construct explanations using reasoning, correct sequence, examples, and details with relevant information and data. (D4.2.3-5)

Grade Level: 9-12. **Time Required:** 3-4 class periods.

Connection to Energy Literacy

Water plays a major role in the storage and transfer of energy in the Earth's system (Energy Literacy 2.4). In this activity, students consider how the availability of water as a resource has impacted development in the United States or elsewhere, drawing on geography and history.

Activity Outline

- Ask students to describe the role that water plays in their daily lives. Most students will refer to water for drinking, cleaning, and recreation. Some may recognize the importance of water to agriculture and the foods they eat. Some may refer to the use of waterways for transportation.
- Extend the discussion by asking students to describe some of the ways that water is used to harness energy. Students may refer to hydroelectric power plants that use the energy contained in flowing water to produce electricity. They may also identify water mills that use moving water to drive a mechanical process such as grinding, rolling, or hammering.
- Provide images of water mills and hydroelectric power plants. Explain to students how these structures transform the energy in moving water (kinetic energy) to the mechanical energy of a turbine, which in a mill is used to grind, roll or hammer. In a hydroelectric power plant, the turbine converts mechanical energy into electrical energy.

- Ask students where water mills and hydroelectric power plants might be located (along streams and rivers).
- Create groups of students. Have each group examine (1) a physical map of the United States that shows elevation and water reservoirs and (2) a population map. Ask students to look for patterns in the settlement of populations and proximity to water reservoirs, such as rivers, streams, and lakes. Help them to recognize that many population centers can be found close to sources of water.
- Ask individual students or pairs of students to research three facts about the role that water played in the settlement of people and the development of the United States. Have students put their research into writing and present their findings to the class.