

Lesson 16

Clues to the Past

What clues do land formations provide to the past?
What are indicators of pre-glacial activity in the Farmington River Watershed?
What are indicators of glacial activity in the Farmington River Watershed?

GOAL To simulate a canoe trip down the Farmington River to the mouth of the CT River citing geological and historical features.

OBJECTIVES Students will:

- ✓ read a narrative that provides clues to the past
- ✓ identify land formations that demonstrate particular times
- ✓ follow the Farmington River to the mouth of the Connecticut

MATERIALS copies of narrative, pencils, paper for writing answers, background information sheet

CORE CURRICULUM CONTENT STANDARDS

- Language Arts 1(3), 2(1,2,4)
- Science 3(3), 6(1,3), 7(1,4,5), 8(4), 12(6)
- Social Studies 3(3,6,7), 9(1-5), 10(1-4), 11(1,5)

VOCABULARY glacial, ridge, basalt, lava, fault, talus slide, boulder, Precambrian rock

PROCEDURES

1. Begin by explaining that they will be taking a (simulated) journey down the Farmington River to the Connecticut River. They will be riding in a canoe that will take them through rapids, riffles and pools of water.
2. Ask if any of the students have had an opportunity to paddle in a canoe. Have them recount their experiences.
3. Explain that during their simulated canoe trip, they will “see” clues to a past time frame. Each clue will correspond to a time period. It might be during pre- glacial times, the result of glacial activity, Native American times, or Colonial Period/Industrialism.
4. Explain that the clues to the past are numbered in the narrative. Have students try to determine what time period the clues indicate. (They may refer to background student information sheet at end of lesson).
5. Have students read the “Journey Down the Farmington” scenario (end of lesson):

6. Have students research a particular geological phenomenon or historical time period and describe to class.
7. If possible, visit an area of the Farmington River that has historical significance. Conduct a walk through a historical area of a town, or visit a geological formation, such as the Talcott Mountain.

EXTENSIONS

1. Take a canoe trip down a particular area of the Farmington River (with an adult's permission).
2. Research the history of your town and note any historical areas. Create a simulated tour of the area and present to class.

RESOURCES

Farmington River Guide, 2002, Farmington River Watershed Association.

GLOSSARY

basalt - a rock of igneous origin

boulder - a large rounded mass of rock lying on the surface of the ground or embedded in the soil

fault - a dislocation caused by a slipping of rock masses along a plane of fracture; also the dislocated structure from such slipping

glacial - having to do with a huge mass of ice slowly flowing over a land mass, formed from compacted snow in an area where snow accumulation exceeds melting

lava - the rock formed by the cooling and solidifying of molten rock that reaches Earth's surface through volcanic activity or fissure

Precambrian rock - rock traces belonging to the geologic time period between Hadean Time and the Cambrian Period, often subdivided into the Archean and Proterozoic eras, comprising most of the earth's history and marked by the appearance of primitive forms of life

ridge - a long, narrow area of hills and mountains

talus slide - sloping mass of rock debris at the base of a cliff

Journey Down the Farmington

You will begin your journey in Otis, Massachusetts and continue along this stretch to Colebrook, CT. Winding through woods and fields, you will enter the most rigorous stretch of the Farmington River. The river twists and turns through rapids and you will narrowly avoid (1) big boulders and ledges. (2) White streaks of magma protrude from the steep rocks. After ending this segment of the river, you will enter the area designated as the “Wild and Scenic” Section of the River. This is a 14 mile stretch of the Farmington River from the bottom of the Goodwin Dam in Hartland to New Hartford. Receiving federal protection from dams, bridges, hydroelectric facilities that can negatively impact the flow of the river, the distinction is awarded to outstanding rivers for their beauty and wildlife.

Your canoe will flow through two state forests with large hills that are made of (3) Precambrian rock. Further down, you will notice remnants of abandoned (4) water powered mills, that were one time bustling as (5) iron, paper, cloth or wood furniture factories.

Paddling through Satan’s Kingdom section of the river, you will travel through rapids to a gorge. Careful that you do not capsize! (6) Mountains seemed like they could block water flow, but water was able to pass through the gorge to create the rapids. Below the falls, you will get a glimpse of (7) Indian Hill and an area of bedrock called (8) fishing rocks.

Once past this area, you will travel through a few rapids and then be able to sit back and relax as you travel through Canton, Avon, Burlington and Farmington. You will notice (9) huge gravel pits used for construction material. Long stretches of slack water provide the perfect time for fishing! (10) The river turns north away from the Pequabuck as you head towards Simsbury.

You will pass remnants of an (11) aqueduct in Farmington and the Talcott Mountain in Simsbury is seen in the distance. (12) Huge accumulations of the rock debris can be seen at the foot of the cliffs. This easy flow of the section of the river provides an excellent opportunity to take in the wildlife, floodplains and meadows along the river.

The last section of the river brings you to the (13) Tariffville Gorge, a gap in the Talcott Mountain and a dangerous section of the river with big drops and rapids. Hold on!

After this section, you will pass an old (14) 250 foot dam that powered water wheels that connected to electric generators. Going through Windsor, you will pass (15) old textile manufacturing mills. The end of the Farmington River is marked by an island just past Loomis Chaffee School. At this point, you will enter the Connecticut River, which is around 400 feet wide. Your 81 mile journey has ended.

Background Information Sheet

Geology and History of land

Pre-glacial

- **Otis, MA to Barkhamsted, CT**
- **Steep ridges with white streaks of molten rock (produced by collision, noted below)**
- **Farmington River flowed into Quinnipiac River, New Haven**
- **Crystalline uplands (Berkshires south to northwestern CT) ranges in age from 800 to 424 million years old**
- **Precambrian rock – one billion year old rock (Cameron line, a fault joining 500 million year old rock of pre-Atlantic Ocean floor, collision occurred 400 million yrs ago)**
- **Talcott Mountain Ridge – divides the valley floors of Farmington and CT Rivers – ridge a result of molten rock solidifying and tilting because of a fault (a break in the earth's crust)**
- **Mountains at Satan's Kingdom blocked water flow, creating a lake extending northwest**

Result of glacial activity

- **Big boulders and ledges**
- **Wedge-shaped deposit of glacial debris, slowed the Farmington's flow to south, causing it to turn north**
- **Lake formed as a result of wedge**
- **Huge sand and gravel pits formed because of retreating glacier**
- **White silicon-rich sand eroded from Crystalline Uplands**
- **Other sand pits are reddish, erosion from iron-rich sandstone to the east and northeast**
- **Lake grew in size until it reached Tariffville – able to top ridge and cut a gorge that enables Farmington to flow into CT River**
- **Talus slides (huge accumulations of rock debris)**
- **Old glacial lake – alluvial deposits (Windsor)**

Native American Times

- **Virgin pines grew in Hartland to New Hartford**
- **Indian Hill – 20 wigwams, Tunxis Indians (New Hartford to Collinsville)**
- **Indian Fishing Rocks (bedrock steps where Indians speared fish)**
- **Northerly bend of river – Tunxis Indians located**
- **Meadows lining river in Simsbury planted by Massaco Indians**
- **Salmon in river; no dams**
- **Larger trees, no pastures, mostly woods**
- **Clear, rocky river**
- **Wildlife, such as beaver, fox, deer, moose, different species of birds thrived**

Colonial/Industrialism

- **Otis, MA to Barkhamsted – iron industry**
- **Hartland to New Hartford – remnants of water powered industry (Hitchcock Chair Co., Ward’s Paper Co., Wilcox Puddling Mill - iron purification)**
- **Virgin pines used for ship masts English navy (“Mast Swamp”)**
- **Bridge in Satan’s Kingdom section – marched across by soldiers on way to Boston**
- **Collin’s Company (tool and axe co.)**
- **Farmington Canal – 1825 – 1847**
- **Remnants of dam washed away during 1955 flood – dam built in 1800’s**
- **Cowles Manufacturing Co. – power wheel**
- **River Mills near Windsor – manufacturing, three electricity plants (dam remnants)**
- **River becoming polluted**
- **Fenced pastureland**
- **Farmlands – trees clear cut**
- **Beaver and other animals hunted for pelts, decline in populations**