

Table of Contents

Introduction	3
Meeting Standards and Benchmarks	4
How to Use this Book	5
Achievement Graph	7
Practice Passages	
The Inventions of Ancient China	8
Unseen Volcanoes Build New Land	10
Science	
Changing with the Environment.	12
Niagara Falls: A Changing Natural Wonder.	14
The Amazing World Beneath Our Feet.	16
Your Remarkable Body	18
Wild Weather.	20
A Man Concerned with Safety	22
Geography	
Nature’s Recycling.	24
El Niño Brings Weird Weather.	26
Staying in Balance.	28
Changing the Chinchilla	30
The Mighty Redwood	32
We Need Wetlands.	34
History	
Communicating Then and Now	36
Visiting the Moon	38
World War II Submarines.	40
The Sky’s the Limit!	42
Working for the Right to Work.	44
Sacagawea Helped Explore America	46
Answer Key	48

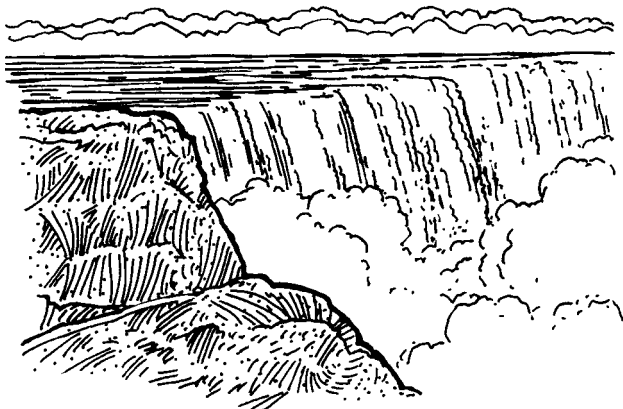


Science Standard: Understands basic Earth processes

Benchmark: Knows how features on the Earth's surface are constantly changed by a combination of slow and rapid processes (e.g. weathering; erosion; and deposition of sediment caused by waves, wind, water, and ice)

Niagara Falls: A Changing Natural Wonder

Niagara Falls is a beautiful part of the Niagara River. This river is part of what separates the U.S. and Canada. Niagara Falls has two parts: the Horseshoe Falls and the American Falls. Canada owns the U-shaped Horseshoe Falls. The American Falls belongs to the U.S. More water goes over Niagara than any other falls in the world. Millions of people visit there each year.



Niagara Falls started out as river rapids. Over time the rushing water wore away the rock of the riverbed. Different kinds of rock erode at different rates. Hard dolomite covered soft layers of limestone, sandstone, and shale. The rushing water tore away the softer rock. The hard layer was left sticking out like a shelf. Water fell over this shelf. The Falls were born!

Twelve thousand years ago Niagara Falls was seven miles (11 km) downstream. Every year more rock wore away. This made the falls move back about three feet (1 m) each year. Slowly the falls moved upstream. This left behind a deep gorge.

During the early 1900s people started **diverting** water from the river above the falls. This water flows into a power plant and makes electricity. The water is released back into the Niagara River below the falls. As the demand for electrical power has increased, more water has been taken. Less water going over the falls means less erosion. So the falls keep moving today, but not as fast as before. Each year the American Falls moves back about an inch (2.5 cm). Lots more water goes over the Horseshoe Falls. It erodes at least 3 inches (8 cm) per year.

Right below the Falls the water has worn a hole as deep as the falls is high! When the lower rock layers wear away enough, the upper ledge will fall. This can be dangerous. Scientists keep track of the Falls' edges. They blast away unstable edges. This way people won't be standing on them when they fall.

Niagara Falls: A Changing Natural Wonder

Comprehension Questions

1. Niagara Falls was caused by

- (a) diverting water.
- (b) a deep gorge.
- (c) making electricity.
- (d) water erosion.

2. On a historical time line, what happened most recently?

- (a) A gorge formed.
- (b) River rapids caused erosion.
- (c) The Falls erosion decreased.
- (d) The Falls moved upstream.

3. Why has the Falls' rate of erosion changed?

- (a) The Falls have reached a layer of very hard rock.
- (b) People have decreased the amount of water that flows over the brink.
- (c) People have built up the brink with cement.
- (d) People have blasted away unstable edges.

4. *Diverting* means

- (a) redirecting.
- (b) using.
- (c) changing.
- (d) polluting.

5. What formed the deep hole beneath the Horseshoe Falls?

- (a) power shovels
- (b) erosion
- (c) electricity
- (d) explosions

6. Picture yourself standing right near the brink of Niagara Falls. What don't you see?

- (a) rapids
- (b) falling water
- (c) swimmers
- (d) rocks

7. Would you like to visit Niagara Falls? Explain.
