Unit 1 How Did Oregon Get Here?

Words to Learn

bar, continent, erosion, erupt, geology, gorge, indent, jetty, strait, volcano

Getting Started

The next morning dawned cool and cloudy. The boys and LaToya ate cold cereal from paper bowls with plastic spoons while LaToya's parents loaded the last baggage including everyone's bikes.

"Where are we going?" Raoul wanted to know.

"We're heading for Astoria first," Mrs. Franklin told him. "Astoria is the first place Americans settled on the west side of the Rocky Mountains."

"I don't know much about Oregon," Raoul admitted. "And I've lived here all my life."

"So have I, but I don't know much either," Joshua agreed.

"How did Oregon get to be Oregon?" LaToya wanted to know.

"Well," Mrs. Franklin said, "it was like this…"

"A story!" LaToya squealed.

Joshua nudged Raoul. "She's a great storyteller. This is going to be fun."

In the Beginning

"It all started when God made the world," Mrs. Franklin began. "According to Genesis 1:9, on the third day of creation God said, 'Let the water under the sky be gathered to one place, and let dry ground appear.' God's command separated water and land at once."

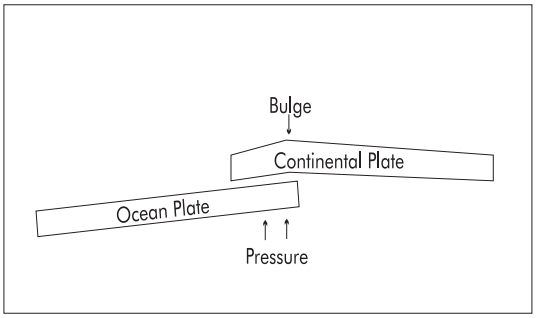
"What a splash that must have made!" said Josh.

"Some scientists think that at first all the land clumped together," Mrs. Franklin continued.

"Like a super continent?" Joshua asked.

"Probably," Mrs. Franklin agreed. "But what God did started a process. Our continents ride on plates of solid material that float on the earth's melted center. These plates began to drift apart. Naturally the land on the plates drifted with them. The plates are still drifting today. Sometimes a plate drifts into another plate. When that happens, one plate gets pushed down and slides under the other one."

A drawing of how continental plates work



"Who figured out all that stuff?" Joshua asked.

"Geologists," Mrs. Franklin explained. "Geology is the study of earth's history as we can learn it from rocks."

Columbia Gorge

"Are they sure about those plates?" LaToya asked.

"Reasonably sure, although no one can prove it. Scientists believe one plate is sliding under another along the Oregon coast. That would explain why much of the Coast Range grows a little higher each year."

"How much is a little?" Raoul wanted to know.

Mrs. Franklin smiled. "Less than an inch in many places."

"Wow!" Joshua said. "No wonder we never notice."

Raoul looked out the window. Thick brush grew on either side of the road. "Why aren't we crossing more mountains?" he asked. "When I went to the beach with my folks, we crossed mountains."

"Right now we are following the Columbia Gorge," Mr. Franklin told them. "The Columbia River carves a narrow path to sea. Our road follows that path."

"How can a river carve, Dad?" LaToya asked.

"A river makes its path by washing away the soil and rock that blocks it," Mr. Franklin said. "But at one time the Columbia probably exploded through the mountains."

"How could it do that?" Joshua said. "I've never heard of a river exploding."

"Isn't that what happens when a dam breaks, Joshua?" Mrs. Franklin asked.

"I suppose so, but what does that have to do with the Columbia River a long time ago?"

"Long ago, during the ice age, scientists believe that glaciers dammed a river in Montana. The ice dam created a huge lake we call Lake Missoula. Later when the world warmed again, the ice dam broke and all the water rushed out at once," Mrs. Franklin explained. "The water raced into the mountains and scoured a path through."

"Wow!" Joshua said. "I'm glad I wasn't around for that."

"You should be," Mrs. Franklin said. "Scientists think there was so much water that it covered what is now Portland—and even spread down into the Willamette Valley."

Questions

1. How do scientists think the land was arranged immediately after God separated land from water?
2. What continues to happen to the land since that time?
3. How do scientists think the Columbia River made Columbia Gorge?
4. Where did Americans first settle west of the Rocky Mountains?
5. What does a geologist study? Explain.

Changing Mountains and Coastline

Mrs. Franklin smiled at Raoul. "I'm glad you asked about mountains. The Coast Range does have mountains, but they aren't very high. The highest mountain, Mary's Peak near Corvallis, reaches only four thousand feet above sea level. Much of the flat land in eastern Oregon is higher than the mountains in the Coast Range. We call that area the high desert."

"Will we see Mary's Peak?" Joshua asked. "Maybe," Mrs. Franklin said. "If we do, it will be on a different part of the trip. Before summer ends we will travel along much of Oregon's coast, which stretches 296 miles—from Astoria, Oregon, to Brookings on the California border. But we will not see many seaports."

"Why aren't there seaports?" LaToya asked.

"Oregon has about 296 miles of very smooth coastline," Mrs. Franklin told them. "That means there are few indented places to help make calm bays. Oregon has rivers that reach the ocean, but few of the river mouths make good harbors."

"Not even the Columbia?" Raoul asked. He pointed out the window. "It looks big enough."

"We see ships at Portland all the time," LaToya said. "Don't they travel up the Columbia?"

"Ships do come up the Columbia," Mrs. Franklin said, "but the river has strong currents. The bar—water where the river meets the ocean—is rough and dangerous. Many ships have sunk there over the years. Soil and other things that wash down the river also tend to settle at the river's mouth. What settles is called silt.

"Oregon's other main port is Coos Bay in southern Oregon. Ships carrying freight also put in at Coos Bay. At one time many ships carried logs or other wood products from Coos Bay to ports around the world."

"Coos Bay can be dangerous too," Joshua said. "Remember all the talk about the New Carissa when we were little? It ran aground near Coos Bay."

"That was in 1999," Mrs. Franklin told them. "Oregon has only two other important bays—Tillamook Bay near Tillamook and Yaquina Bay at Newport," she continued.

A dredge removes silt from Yaquina Bay at Newport

Raoul and Joshua craned their necks to look up the side streets of Astoria. "Isn't anything level here?" Raoul asked.

"Doesn't look like it," Joshua said.

"You will see plenty more mountains when we travel south," Mrs. Franklin told them.

"The process God started did not stop when the continents separated from one another," Mrs. Franklin continued. "Our world is still changing. Did you know that

Mount Hood looking west from Highway 26

every year our coastline moves east about two feet?

"What makes it do that?" Raoul wanted to know.

"Erosion," Mrs. Franklin explained. "Nature causes some of it. People also cause some of it when they use riprap. Often erosion removes soil from one place. Later the same soil settles somewhere else as silt."

"What's riprap?" Raoul wanted to know.

"Riprap is a wall of stones or concrete chunks stacked at random to change the way waves hit the shore and to stop erosion. Stone jetties can cause more land to form beside them, but sometimes riprap can cause erosion," Mrs. Franklin explained.

LaToya stared at her mother. "I didn't know you knew all that. How'd you find out?"

Mr. Franklin laughed. "She did her homework."

"Homework!" All three children said it together.

"Believe it or not, grown-ups do homework too," Mr. Franklin said.

"What else do you know?" LaToya demanded.

"At Cape Blanco in southwestern Oregon the land rises about an inch every two years. The Coast Range rises much more slowly. On the other hand, near Vancouver, Washington, the land is sinking each year," Mrs. Franklin said. "Probably the movement of plates causes these changes."

"What else makes land change?" LaToya asked.

"High winds and floods wear down land in one place and put it down in other places. This is natural erosion and silting. We just talked about the flood that helped carve Columbia Gorge. Active volcanoes also change land," Mrs. Franklin said.

"Active volcanoes?" Joshua asked, surprised. "Where?"

"Our own Mount Hood for starters," Mrs. Franklin said. "It has active steam vents."

"You mean it could erupt?" Joshua asked.

"Yes indeed," Mrs. Franklin said. "But Mount Hood isn't the only one. South Sister, one of the Three Sisters, is still active. In 2001 scientists found signs South Sister might erupt in the near future. And Mount Mazama, home of Crater Lake, could erupt again. Mount Rainier in Washington is active. Mount St. Helens, also in Washington, did erupt when I was a little girl."

"Wow!" LaToya and Joshua said together. They looked at each other and grinned. "We didn't know all that."

"You make it sound like the Cascades are a collection of volcanoes," Joshua said.

"What about the rest of Oregon? Does it have volcanoes too?"

"Some of it does," Mrs. Franklin said. "Volcanoes erupted all over eastern Oregon. Lava from some of the volcanoes built the high mountains of the Cascades. Others erupted on flat land. Over much of eastern Oregon lava flowed from cracks in the ground. Also at one time, shallow inland seas covered much of the land. At Fort Rock an underwater volcano built a ring of rock in a lake. Much of it remains today. Some of Oregon's earliest people lived near Fort Rock."

Questions

1. Name the two busiest ports in Oregon.
2. What Oregon mountain range gets a tiny bit higher every year?
3. Name two active volcanoes in Oregon.
4. What direction is Oregon's coastline moving? What causes this?
5. Crater Lake lies at the top of what mountain?

The First Oregonians

"Who were Oregon's first people?" Raoul asked. "Where did they come from?"

"We think it happened like this," Mrs. Franklin said. "God made Adam and Eve, the first people. They lived in the part of the world we call the Middle East, but their descendants gradually spread across Europe and Asia. Eventually some of them reached North America."

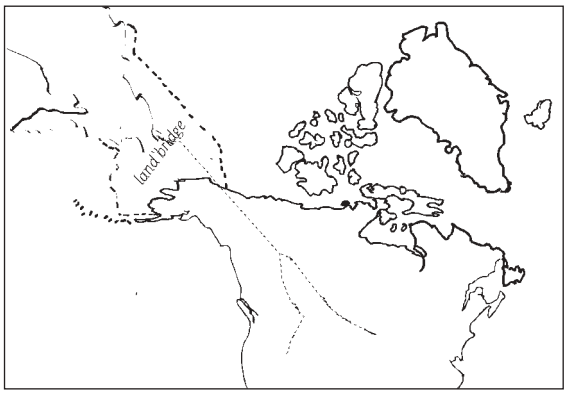
"Wait a minute!" Joshua interrupted. "Traveling from Europe to Asia, or even Africa is pretty easy. You could almost do it without using a boat. But how did those early people get to America? There is ocean water all around North and South America."

"You're right, Joshua," Mr. Franklin said. "But there is one place where North America and Asia lie close together. Do you know where it is?"

For a moment the children sat quietly, thinking. Then Raoul's face lighted up. "I think I know. It's Alaska, isn't it?"

"Yes. The very closest place is Bering Strait," Mrs. Franklin said. "Scientists think the people crossed there during the ice age. When ice froze all over the world, the water level dropped in the oceans. Probably land connected Asia and North America then and people walked across."

This map shows a land bridge the first North Americans may have used.



"Then where did they go?" LaToya asked.

"The first people in America did not travel down the coast," Mrs. Franklin explained. "At first they followed game animals east. They probably traveled

Fort Rock was once an underwater volcano.

gradually south somewhere near the Rocky Mountains. Likely the first Oregonians crossed the Rocky Mountains near the Snake River, and lived in what is now eastern Oregon."

"What did they eat?" LaToya asked. "Sagebrush?"

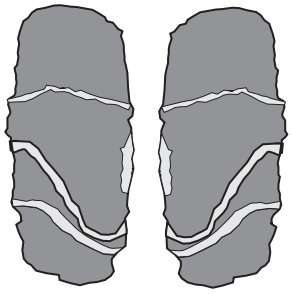
Everyone laughed. "Remember we learned that God started a process when He separated land from water," Mrs. Franklin explained. "In those days the volcanoes that became the Cascade Mountains may not have been as high as they are now. If so, they did not keep the rain away from eastern Oregon as they do now. Shallow lakes covered what is now desert. Animals like camels and mammoths lived there and fish swam in the lakes.

"Scientists call these first Oregonians Paleo Indians," Mrs. Franklin continued. "In a cave near Fort Rock, scientists found sandals around ten thousand years old. Those sandals were made of sagebrush. People probably spent their winters near the lake. Likely they caught fish for food.

"Near Newberry Crater, in 1998, other scientists found a lodge other Oregonians had used. They believe the people lived near the crater so they could harvest berries. Some scientists believe that lava buried the lodge when Mount Mazama erupted about eight thousand years ago."

Questions

1. What do we usually call the first Oregonians?
2. Name two places where scientists have found traces of these early people.



Sagebrush sandals like these were found near Fort Rock.

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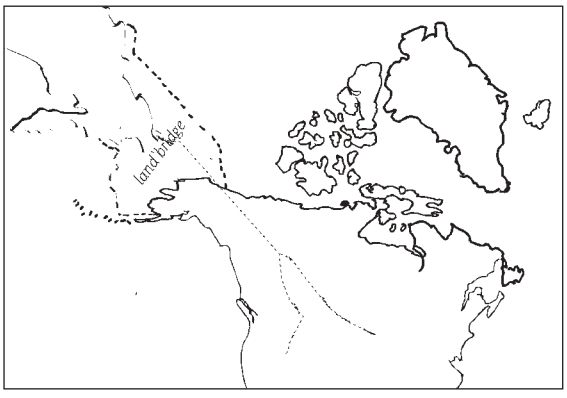

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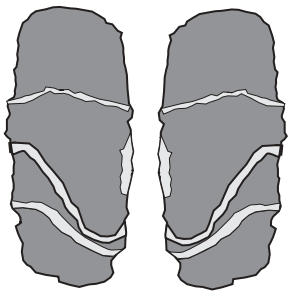

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