

Landscapes from Coast to Coast



Introduction:

A landscape is a region in which the landforms are related by their structures, the processes that formed them, and the ways in which they developed. Landscapes are the product of the interaction of geological processes, bedrock type and structure, erosion, and climate.

Mountains, plateaus, and plains are major types of landscapes – each distinguished by bedrock structure, bedrock type, and topographic relief (elevation).

Mountains have a high relief with a core of metamorphic or igneous rock that has been deformed by faulting or folding. Plateaus are large areas of flat land at high elevation. A plateau generally has an underlying structure of horizontal sedimentary rock that has been gently uplifted. Plateaus are often found next to mountain ranges and were probably raised by the same forces that formed the mountains but were not faulted or folded as greatly as the rocks in the mountains. Plains are large areas of flat land at low elevations. Plains form when sediments are deposited in horizontal layers at or below sea level. The sediments eventually form horizontal sedimentary bedrock and are uplifted above sea level to form a plain landscape.

In this lab you will be examining landscapes from one coastline to another. You will see how the landscapes change with changes in bedrock structure and elevation. You will also see how landforms change due to different erosional processes and differences in climate. Use your notes to help you answer the questions in the lab.

The following is a list of ways that you can **improve** your science lab write-ups. *Check off when completed.*

- I used complete sentences when appropriate.
- I answered all questions with complete ideas.
- I am neat, including using a pencil to erase mistakes.
- I reviewed the lab to make sure all questions are answered correctly.
- I asked the teacher for help when needed.

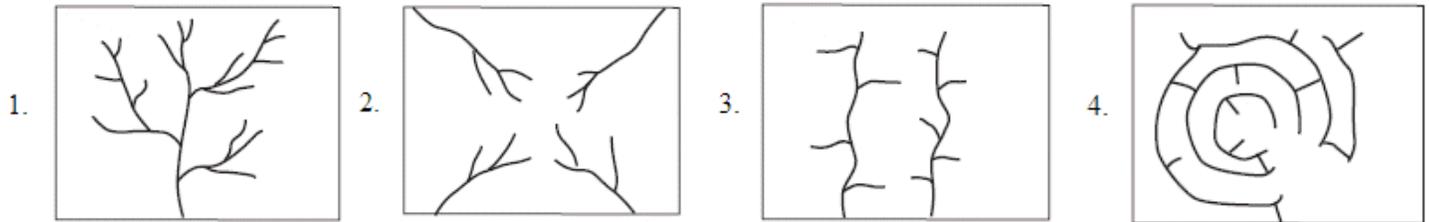
Station 1 – Shoreline

1. Which agent of erosion created most of the landforms in this landscape? _____
2. Locate the landform labeled 14. What is this landform and how did it form?
Landform? _____
How did it form? _____
3. What is landform 15 and how did it form?
Landform? _____
How did it form? _____
4. The beaches labeled 6 and 7 have been produced by longshore drift. Which compass direction is the longshore current moving sediment to create these beaches? _____
5. Are the sea cliffs (12) depositional or erosional features? _____

Station 2 – Volcanoes and Mountains Created by Faults

1. Why are volcanoes considered mountains? _____

2. Circle the correct type of drainage pattern below that is associated with volcanic domes.



3. Identify the name and composition of the rock that makes up the lava flows at locations 31 and 32.

4. What is landform 53? _____
5. Based on the shape of landform 53, which compass direction is the wind blowing over this landscape?

6. What is the dominant agent of erosion in this landscape? _____
Why? _____

Station 3 – Alpine Glaciers and Dome Mountains

1. Describe three reasons why this landscape is considered a mountainous landscape.

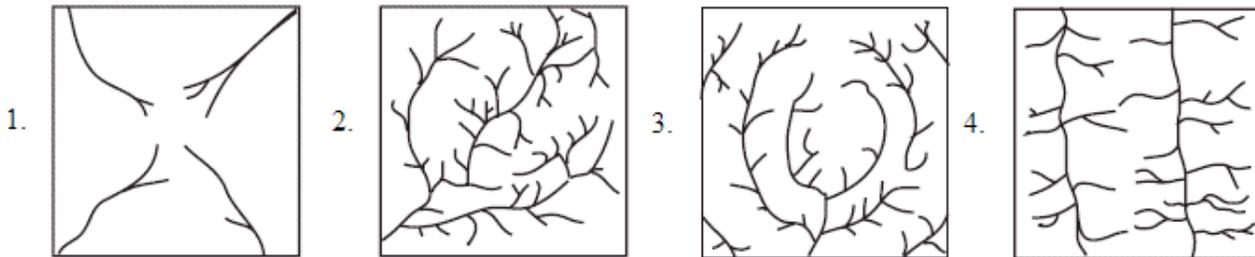
- _____
- _____
- _____

2. What is the dominant agent of erosion in this landscape? _____

3. Why does this landscape have glaciers? _____

4. What landform features in the mountains indicate they have been eroded by glaciers?

5. Circle the correct type of drainage pattern below that is associated with eroded dome mountains.



6. Locate landform 90 to the southwest of the dome mountain. Would this landscape be considered a plain, plateau, or mountain?

Landscape? _____

Provide 2 pieces of evidence to support your answer.

- _____
- _____

Station 4 – Continental Glaciation

1. Using the model landform and the clues provided, identify the continental glacial landforms indicated below.

- Find landform 108 and the hills that surround it. These hills are steeper in the direction the glacier came from and are elongated in the direction the glacier was moving. What are these landforms called and which direction was the glacier moving at location 108?

Landform? _____

Direction of Glacier Movement? _____

- Find landform 111. This is a depression in the ground that filled with water.

What is landform 111? _____

How did it form? _____

- What is landform 109? _____

How did it form? _____

- Landform 110 formed when the glacier's meltwater deposited sand and gravel in a dome-shaped hill at the edge of the glacier. What is this glacial landform called? _____

2. Examine the large river that flows through the southern portion of the landscape.

- What is the wide flat area in yellow that surrounds the river? _____

- Is this a youthful or mature river? _____

Provide 2 pieces of evidence to support your answer.

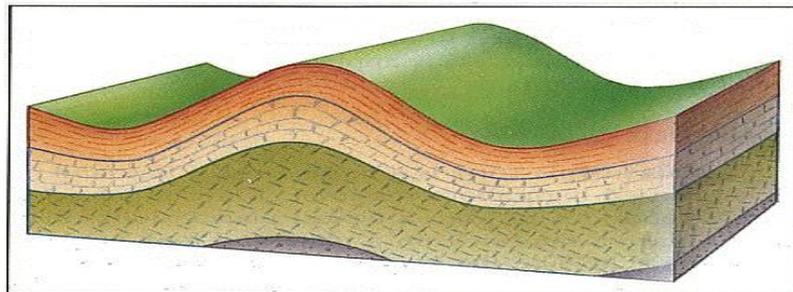
1.) _____

2.) _____

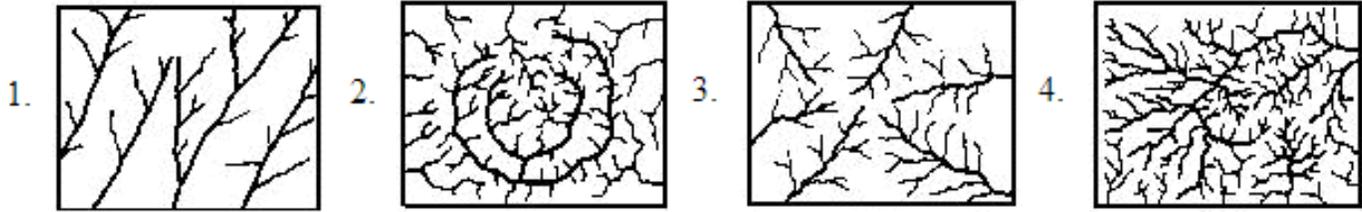
3. On the south edge of the landscape, locate the caves labeled 123. Why did these caves form?

Station 5 – Mountains Created by Folding

1. Look at the south edge of the landscape model to see the folding that created these mountains. Draw arrows on the diagram below to show the direction of forces that created these folds.



2. Circle the type of drainage pattern below that is associated with eroded folding.



3. Looking at the at the different folded rock layers on the **south side** of the landform:

- Which rock forms the ridges of the mountains? _____
- Which rock forms the valleys between the ridges? _____

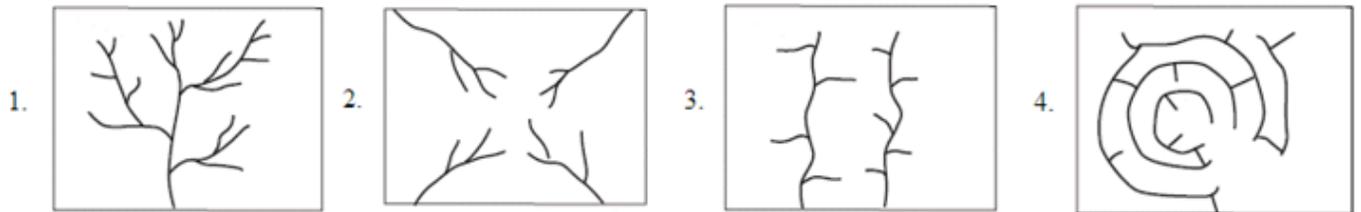
4. What property of the rocks you just identified contributed to the formation of ridges and valleys?

Station 6a – Coastal Plain

1. Provide 2 pieces of evidence why this landscape is titled *Coastal Plain*.

- _____
- _____

2. Circle the type of drainage pattern below that is associated with relatively flat bedrock that has a consistent resistance to erosion.



3. What are the landforms labeled 145 and are they created by erosion or deposition?

Station 6b – From Coast to Coast

1. Using a computer, look at all of the landscapes assembled together. Which landscape is most like New York State and **WHY**? _____

2. Which other landscape best matches one that can be found in NY State? _____