

SCIENCE·3D

HELLBENDERS

In this packet, sample student answers are provided in **red** and notes to teachers are in **blue**.

Using the **Explore Your Backyard** activity, students will explore constructive and destructive processes and how they shaped a local environment. Then they will investigate traits of a local organism of their choice and see how those traits influence its ability to survive and reproduce.



EXPLORING CONSTRUCTIVE AND DESTRUCTIVE PROCESSES

To understand ecosystems, it is important to know about how they were formed and how they might change in the future. Some processes are destructive, like erosion and weathering caused by wind, ice, and water. Floods and glaciers moving across the land can quickly change the landscape. Others are constructive, like lava from a volcano building a new island or deposition of sediment. During this activity you will explore the processes that helped to form local features. Your teacher will help you decide what ecosystem to study.

The ecosystem I studied:

Alpine glacier habitat

1. **Describe** the habitat or landscape feature that you are studying.

This habitat is high in elevation, above the tree line. A major landscape feature that can be found here is a glacier. It's windy, and the ice is a very clear blue. Mountain peaks are nearby.

Good answers should include not only the name of the feature, but also a description of what it looks like, the elevation, colors, and surrounding features.

2. **Draw** a labeled diagram of the feature:



3. **Describe** any destructive and constructive processes that may have created different parts of the landscape or habitat. On your drawing, label the portions that were the result of constructive processes and those that were the result of destructive processes.

The valley that the glacier is in was formed by a destructive process. Due to the pressure from the large amounts of snow and ice, the glacier is growing. The glacier is also part of a destructive process from global warming. The mountains are part of a constructive process from two tectonic plates colliding.

Good answers will include at least one feature that was created with a constructive process and one that was created through a destructive process. Students should provide a description of how the process formed the particular feature.

Extend the Lesson: To address NGSS and other standards, lead students in a discussion to consider how different constructive and destructive processes affect the surface of the earth over different spatial and temporal scales. For example, have them compare the rate of deposition in a river versus volcanic eruptions or tectonic activity.

4. Choose one organism in the habitat you are studying and **describe** how its traits affect its ability to survive and reproduce in this habitat.

Good answers will include at least two traits and a description of how those traits help an animal survive and/or reproduce. For example, a thick fur coat helps a mountain goat survive cold, alpine, weather conditions.