

## **S5E1: Landforms of Georgia**

Dates: 3/1 – 3/31

### ***Key Terms***

Technology<sup>2</sup>

Human intervention<sup>2</sup>

Seismological studies<sup>2</sup>

Flood control<sup>2</sup>

**Dams<sup>2</sup>**

**Levee<sup>2</sup>**

**Retention Ponds<sup>3</sup>**

Storm drain management<sup>3</sup>

**Beach reclamation<sup>3</sup>**

**Weathering<sup>2</sup>**

**Erosion<sup>2</sup>**

Organisms<sup>2</sup>

Destructive Forces<sup>3</sup>

**Deposition<sup>3</sup>**

**Sediment**

**Tsunami<sup>2</sup>**

**Landform<sup>2</sup>**

**Seismograph<sup>3</sup>**

**Fault<sup>3</sup>**

**Trench<sup>3</sup>**

**Ridges<sup>3</sup>**

**Tectonic Plate<sup>3</sup>**

**Earthquake<sup>2</sup>**

**Continental drift<sup>3</sup>**

Crust<sup>3</sup>

Mantle<sup>3</sup>

**Magma<sup>3</sup>**

**Lava<sup>2</sup>**

**Glacier<sup>3</sup>**

**Volcano<sup>2</sup>**

Constructive forces<sup>3</sup>

Ring of Fire<sup>3</sup>

### ***Framework for Teaching:***

#### **Students Will Be Able To:**

1. Relate landform to topography.
2. Classify landforms as the products of sand and/or water.
3. Identify Georgia's geologic regions.
4. Compare and contrast constructive and destructive processes.

5. Classify and categorize surface features as caused by constructive or destructive processes.
6. Compare and contrast weathering and erosion.
7. Describe the relationship between erosion and deposition.
8. Explain how a delta is formed.
9. Relate continental drift, plate tectonics, and faults to earthquakes, volcanoes, and ridges.
10. Identify how volcanoes, magma, and lava are related.
11. Explain how earthquakes and volcanoes can cause tsunamis.
12. Give real life examples of earthquakes, volcanoes, and tsunamis in our world.
13. Classify the technology/human intervention as seismological studies, flood control, or beach reclamation.
14. Give examples of how flooding can be controlled using human intervention and technology.
15. Describe a seismological studies and its purpose.
16. Give examples of how beach reclamation can be addressed using human intervention and technology.

**For the teacher to know for their own understanding and to avoid misconceptions:**

1. Landforms must be connected to a type of process (destructive or constructive).
2. Constructive processes include deposition, earthquakes, volcanoes, and faults
3. Destructive processes include erosion, weathering, the impact of organisms, earthquakes, and volcanoes.
4. The process is not to be confused with the surface feature. The process is the cause, the feature is the effect.
5. Weathering is the breakdown of earth materials into smaller parts. Erosion is the movement of materials from place to place by natural methods (i.e. water, wind).
6. Some processes can be constructive or destructive depending on the situation. For example, volcanoes can form land in the ocean (e.g. Hawaii) or volcanoes can erupt and destroy a village.
7. The following are types of processes used to control constructive and destructive processes.
  - a. **Seismological Studies:** Preparative measure for predicting earthquakes, volcanic eruptions, and tsunamis.
  - b. **Dams:** hold back floodwaters.
  - c. **Levees:** walls along river banks that prevent rivers from going outside of their river banks.
  - d. **Storm Drain management:** Redirection of drainage to retention ponds to slow runoff and reduce the risk of flooding downstream.
  - e. **Beach Reclamation:** Reduces the effects of erosion. Done by dredging sand from the ocean floor and depositing the sand on the beach. Undoing what has naturally happened.
  - f. **a** is related to earthquakes, volcanoes, and tsunamis (the result of underwater earthquakes). **b-d** is related to flood prevention, and **e** is related to erosion.

**Activities (Suggestions)**

- ✓ Grand Canyon (Picture Perfect)
- ✓ Modeling Earth's Landforms (pg. 62 in the text book)
- ✓ Rivers and Sand (pg. 76 in the text book)
- ✓ Modeling a Volcanic Eruption (pg. 88 in the text book)

**Notes:**

Teaching this unit using cause and effect will help students make appropriate relationships between processes and issues as a result of these processes. Make sure that you explain that these processes do not happen overnight and that they have happened in the past and will continue to happen in the future. Help your students differentiate between the things that technology and engineering can help prevent versus those that are used as prepare for the inevitable. For example, flooding can be prevented by using technology and engineering; however Earthquakes are going to happen and cannot be prevented. We can prepare for Earthquakes using studies and data. This will model for students the process for problem solving in the real world.