Ginny Brackett

Grades 6-8

Earth as a **system** of plates that interact and can cause positive or negative results

Systems may cause positive and/or negative results

Parts of system interact

Earthquakes/volcanoes/Mts

- Kinds/Characteristics of:
  - Description of
  - locations of
  - Types of
  - Earth parts
- Influences of:
  - Measurement of earthquakes
  - Effects / damage
  - Types of Boundaries
- Concepts and theories
  - Causes of
  - Plate movements
    - Evidence that supports
- Issues relating to
  - Human settlements
  - Damage
- Problems relating to:
  - Safety measures
    - Warning systems
    - building standards
  - Requiring building standards

MLR 5-8 Sci and Tech: F 4 L4

MLR 9-12 Sci and Tech F 6, M4

Themes: Systems

Generalizations:

Systems are made up of parts

The parts of a system interact

These interactions can have positive and negative effects.

Systems can react to change

Systems interact with other systems

Essential Questions (indicate those that address curriculum standards)

1. What is the earth made of?
2. How do the parts of the earth system interact?
3.. How does earth system affect us?

Unit Questions

1. Where do volcanoes and earthquakes occur? How does the orientation (direction) of folded mountain belts compare with nearby zones of volcanoes and earthquakes?
2. Why do earthquakes and volcanoes occur?
3. What possible outcomes can occur when two of Earth's plates collide?
4. How do we measure and monitor changes in the earth's surface?
5. How do we gather evidence about the earth?
6. What is the evidence that supports the theory of plate tectonics?
7. How do the properties of the earth effect the features ?
8. How can we use our knowledge about earthquakes and volcanoes to help us predict events?
9. Why are some regions are more prepared for a disaster?
10. How do humans prepare for and react to Natural disasters?

Ginny Brackett 6 - 8 Science (gifted)
Content: Earth as a system - earthquakes and volcanoes

Objective	Level one	Level two	Level three
locations of Volcanoes/ Earthquakes	In their study of Earthquakes and volcanoes students will discover where earthquake and volcanoes are located by marking locations on a map of the world	In their study of Earthquakes and volcanoes students will summarize their findings in a discussion	In their study of Earthquakes and volcanoes students will justify their findings in order to conclude that the earth is a system made up of parts by creating a concept web
measurement of earthquakes	In their study of earthquakes and volcanoes students will explain the three scales used to measure quakes by completing a t chart	In their study of earthquakes and volcanoes students will compare the three scales used by completing a graphic organizer	In their study of earthquakes and volcanoes students will analyze the scales in order to determine how the parts of a system interact by creating a collage
Properties of earth	In their study of E and V students will describe the components of the earth by making a model	In their study of earthquakes and volcanoes students will compare the components of their model with a venn diagram	
Evidence of Tectonics (All do level 1, some do 2, some do 3)	In their study of earthquakes and volcanoes students will summarize the evidence that supports Plate tectonics in a list	In their study of earthquakes and volcanoes students will draw conclusions about the data by comparing it to world maps using a worksheet.	In their study of earthquakes and volcanoes students will justify Plate tectonics evidence in order to conclude that systems change by recreating a map of the ancient earth.
Occurrence Earthquakes and Volcanoes	In their study of earthquakes and volcanoes students will describe the causes by completing concept map	In their study of earthquakes and volcanoes students will distinguish between the types of earthquakes and volcanoes by cause and effect GO	In their study of earthquakes and volcanoes students will connect the occurrences of earthquakes and volcanoes in order to show that systems react using a seminar format
Outcomes of plate collisions	In their study of earthquakes and volcanoes students will create a working model of each kind of tectonic boundary by making a pop up book.	In their study of earthquakes and volcanoes students will create a working model of the earth system in order to show how parts of a system interact by making a pop up book	In their study of earthquakes and volcanoes students will create a model of plate tectonic boundaries that justifies how the earth system parts are of equal importance by making a pop up book
Knowledge to help predict disasters	In their study of earthquakes and volcanoes students will describe how scientists use understandings of plate tectonic by creating a chart explaining how we predict tectonic disasters	In their study of earthquakes and volcanoes students will compare how scientists use understanding of plate tectonic by creating a chart comparing earthquakes to volcanoes	In their study of earthquakes and volcanoes students will predict changes in our warning systems in order to describe how systems interact (earth and human) by creating a chart
Physical/ Chemical properties effect features	In their study of earthquakes students will organize the physical and chemical characteristics of the layers of the earth into a list	In their study of earthquakes students will associate the physical and chemical properties of the layers of the earth with plate movements using a GO	In their study of earthquakes students will compare and contrast physical and chemical properties of earth in order to determine that parts of a system interact by a venn diagram
How are we prepared	In their study of earthquakes and volcanoes students will list the ways to prevent earthquake/volcano damage on a worksheet	In their study of earthquakes and volcanoes students will create a plan to prepare a city for an earthquake with a flow chart	In their study of earthquakes students will design a model or a system that would interact with the Human System and the Earth system that will warn various regions of the world of impending disasters
Regions prepared	In their study of earthquakes and volcanoes students will compare two locations of earthquake disasters and two volcanic disasters using venn diagrams	In their study of earthquakes and volcanoes students will hypothesis the reasons for the differences between the two locations of earthquake disasters and two volcanic disasters using GO	In their study of earthquakes and volcanoes students will hypothesis why areas are not prepared for earthquakes in order to conclude how systems react by using and evidence chart and a written