

# GRASPS

## UNIT: PLATE TECTONICS

### SUBJECT: Science – Grades 8

#### ESSENTIAL QUESTION(s):

- How do plate interactions help to determine risk to humans and the environment?
- What causes the surface of the Earth to change?
- How does what we see today unveil the Earth’s past?
- How can we predict and understand changes to the surface of the Earth?

G R A S P S	
Goal	<b>Goal:</b> Understand the impact plate tectonics has in our community.
Role	<b>Role:</b> Individual or group project: <ul style="list-style-type: none"><li>• Geologist</li><li>• Community planner</li><li>• Presenter</li><li>• Writer</li><li>• Emergency response team</li><li>• Engineer/architect</li></ul>
Audience	<b>Audience:</b> Students would have choice as to who they are presenting to...

- Students in their school or to a younger age group
- Community
- Parents
- School board
- Mayor and council

**Situation:**

It has come to our attention that there needs to be seismic upgrades made to some of our schools in North Vancouver. You are the lead scientist for the district of North Vancouver who investigates earthquakes. Your Earthquake project has been accelerated by the Mayor of North Vancouver. He wants to know:

Where the most recent earthquakes are occurring and if they are more likely to occur in certain locations (analyzing data)

**Situation**

Whether or not there is any way to determine what parts of the world are most prone to them (questioning and predicting)

What is causing the earthquakes (content – layers of earth, plate tectonics, geological events)

What are the effects on peoples lives (impacts on society)

What should the emergency response plan look like (problem solving)

### **Performance or Product:**

Students can present their information to their audience in a variety of ways. You may want to give students the option to choose how they present their learning such as:

**Performance  
or Product**

- PowerPoint
- Letter
- Pamphlet
- Video
- Report
- Poster

### **Standards:**

An accurate explanation of how earthquakes develop

An accurate understanding of the processes under the Earth's crust

Interpreting information from data to support their arguments

**Standards**

The use of multiple representations (diagrams, tables, graphs, etc.) to support their understanding of the topic

The use of The Theory of Plate Tectonics to determine our risk level for earthquakes in the Lower Mainland

A clear and understandable explanation, suited to the audience

## **Differentiation:**

### **Adaptations**

- Have students work in heterogeneous/multileveled groups
- Pick the students roles based that fit their strengths

### **Extensions**

#### **Differentiation**

- The role of architect/engineer will be a more challenging role and require students to make more interconnections between concepts
- Students can look into soil composition and how it will be affected during an earthquake
- Students can look at the land that our schools are built on and if that is a good location due to soil