

The Economic and Environmental Effect of a Natural Disaster

By

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Abstract

In this unit, the expected student outcomes are to research, as a team, an active volcano and one of the two extinct Virginia volcanoes (Mole Hill or Trimble Knob). They are to present this information as a PowerPoint which must include: population, land mass, business and industry, water supply, destruction, how long the eruption lasted, how far did the eruption reach, the number killed, and the aftermath of the eruption. The economic topics that must be included are: the multiplier effect, factors that cause a change in supply and demand, the role that price plays in changing conditions, and unexpected consequences of the eruption.

Students will also design a model community that has been impacted by a volcanic eruption. They are to create a risk reduction plan in order to identify potential hazards associated with an impending eruption. Students are to imagine that one of the dormant volcanoes has erupted and the impact this would have on the surrounding and outlying areas. The students are to create an action plan which is to include: type of eruption, type of material that erupted, path of the eruption (include a map), two positive effects of the volcanic eruption, two negative effects of the volcanic eruption, and advice to the citizens on risk reduction of future eruptions. The scientific topics that must be investigated are: the viscosity of magma/lava, the explosiveness of eruptions, and the types of eruptions.

The students will model a community that is based on one of the extinct Virginia volcanoes that also incorporates the idea that the volcano could erupt. Soda bottles are to be used to simulate the eruption and should be decorated with houses and people representing the present day areas. Then, they will simulate an eruption with baking soda, vinegar, and bird seed.

The skills needed to fulfill the requirements of this unit include: a working knowledge of Microsoft Word and PowerPoint, the ability to research, time management skills, an understanding of the multiplier effect, supply and demand, the price system, and the cause and effect of unexpected consequences. Also, the students need the ability to follow directions effectively, work together as a team, and have good oral and written communications skills.

This unit is an effective way to convey that the knowledge and skills acquired in economics is not isolated to one classroom but dissolves all walls and encompasses all areas of knowledge and life. It shows how basic economic concepts can be integrated with scientific theory and law.

Key Concepts

Economic Concepts

Supply: is the willingness and ability to bring to market (produce/sell) specific quantities of a good or service at different prices in a specific time period, all things remaining the same.

The Law of Supply: states that producers will increase the quantity supplied at higher prices and decrease the quantity supplied at lower prices, if everything else remains the same. When graphing supply and demand, this is known as a change in quantity supplied.

Supply curve: the relationship between the price and the quantity that producers are willing and able to supply

Determinants of Supply: can change supply. A change in supply results from

- changes in the prices of productive resources used to make the good or the service
- changes in the technology used to make the good or the service
- changes in the profit opportunities available to producers by selling other goods or services
- changes in the number of sellers in a market
- changes in the expectations of producers.

When graphing, this is known as a change in supply.

Demand: is the willingness and ability to buy specific quantities of a good or service at different prices in a specific time period, all things remaining the same.

The Law of Demand: states that people will buy more of a good or service at lower prices and less at higher prices, if everything else remains the same. When graphing, this is known as a change in quantity demanded.

Demand curve: shows the relationship between price and the quantity that buyers are willing and able to buy

Determinants of Demand: Determinants of demand can change demand. A change in demand results from

- a change in consumers' incomes
- a change in consumers' preferences
- a change in the prices of related goods or services (complements or substitutes)
- a change in the number of consumers in a market
- a change in the expectations of buyers.

When graphing, this is known as a change in demand.

The Price System: Price allows markets to respond to changing conditions and allocates scarce resources efficiently. Prices provide a signal to both buyers and sellers. For example, rising oil prices provide an incentive for consumers to drive less or buy more efficient cars and an incentive to producers to find more oil. Rising prices for labor provide an incentive for employers to substitute robots or other technology for labor.

The role of price: Allows markets to respond to changing conditions and allocates scarce resources efficiently

Multiplier effect: The idea that a small increase in spending by consumers, businesses or government can cause large changes in economic production. The multiplier also works in reverse when spending decreases.

Unanticipated consequences: In the social sciences, unanticipated consequences or unforeseen consequences are outcomes that are not the ones foreseen and intended by a purposeful action.

Earth Science Concepts

Classification of Volcanic Eruptions: Determined by type of material that was erupted such as ash, smoke, gas, dust, and other particles.

Disaster Preparedness and Risk Response to an Eruption: How a community can prepare for an impending eruption and how communities can respond to an area after the eruption.

Viscosity: The ability of a fluid to resist flow based upon the composition of magma.

Viscosity: ability of a fluid to resist flow

Composite volcano: large sloped volcano that normally exhibits violent eruptions containing lava and rock fragments

Shield volcano: broad-shaped volcano with nonexplosive eruptions

Cinder Cone volcano: steep-sided and small volcano that has accumulations of rock fragment
Tephra-rock fragments that are thrown into the air during an eruption

This project reinforces the concept of supply and demand by having the students integrate supply and demand curves in their PowerPoints in order to explain how natural disasters shift the supply and demand curves to represent the changed environment. The students participate in an activity which demonstrates the multiplier effect and it's far reaching influence. They also observe the effect of price on items before and after a natural disaster. Students show how unanticipated consequences can change a situation, for instance, after an eruption the ground becomes either extinct or more fertile.

This project allows the student the opportunity to utilize items such as bird seed in order to effectively model ash and other volcanic material in order to accurately illustrate a composite, shield, or cinder cone eruption. Furthermore, students also identify the relationship between viscosity and the rate of flow of magma when their eruptions explode based upon what the student includes in their eruption. Finally, rock fragments or tephra, are observed when students have material erupting from their volcano and the environmental/health effects that rock fragments in an eruption have on a local community will be demonstrated.

Economic student learning Objectives:

In the course of participating in the classroom activity, students will

- differentiate between events that cause shifts in demand and/or supply versus those that cause movement along the curve.
- graph shifts in demand or supply.
- analyze the relationship between quantity demanded and quantity supplied in determining prices in a market economy.
- create a demand and supply schedule and graph a demand and supply curve to determine an equilibrium price.
- explain the causes and effects of shortages, surpluses, and government-enforced price controls.
- analyze and graph the change in equilibrium price and equilibrium quantity as events affect demand and supply.
- Research and present in PowerPoint an active volcano and one of the dormant volcanos in Virginia (a team activity)

Economic Standards of Learning:

- *Lesson reflects collaborative use of standards from Civics and Economics, Economics and Personal Finance, and Earth Science)*
- *Standards of Learning reflect the 2008 Social Studies standards which were being used when the lesson was written and taught.*

CE.11 The student will demonstrate knowledge of how economic decisions are made in the marketplace by:

- a) applying the concepts of scarcity, resources, choice, opportunity cost, price, incentives, supply and demand, production, and consumption;
- c) describing the characteristics of the United States economy, including limited government, private property, profit, and competition.

CE.13 The student will demonstrate knowledge of the role of government in the United States economy by:

- a) examining competition in the marketplace;
- b) explaining how government provides certain goods and services;

Economic and Personal Finance Standards:

Demonstrate knowledge of the price system

Demonstrate knowledge that many factors affect income

Examine basic concepts and their relation to product prices and consumer spending

Examine the effect of supply and demand on wages and prices

Role of producers and consumers in a market economy

Demonstrate knowledge of the price system

EPF.3 The student will demonstrate knowledge of the price system by

- a) examining the laws of supply and demand and the determinants of each;
- b) explaining how the interaction of supply and demand determines equilibrium price;
- d) examining the purposes and implications of price ceilings and price floors.

EPF. 4 The student will demonstrate knowledge that many factors affect income by a

- d) describing how changes in supply and demand for goods and services affect income.

EPF.10 The student will develop consumer skills by

- a) examining basic economic concepts and their relation to product prices and consumer spending;
- b) examining the effect of supply and demand on wages and prices;
- h) examining the impact of advertising and marketing on consumer demand and decision making in the global marketplace

Finance Business Competencies:

034 Describe how consumers, businesses, and government decision-makers face scarcity of resources and must make trade-offs and incur opportunity costs.

050 Examine the laws of supply and demand and the determinants of each.

051 Explain how the interaction of supply and demand determines equilibrium price.

053 Examine the purposes and implications of price ceilings and price floors.

055 Describe how changes in supply and demand for goods and services affect a worker's income.

057 Describe the causes and effects of unemployment and inflation.

062 Demonstrate knowledge of the role of government in a market economy.

Earth Science student learning objectives:

1. The student will be able to understand how shield, composite, and cinder cones contrast with one another.
2. The student will be able to explain how related volcanic events such as pyroclastic flows and lahars can affect the impact of an eruption.
3. The students will be able to analyze how a volcanic eruption will impact the local environment and economy.

Earth Science Standards of Learning

VA.SOL.ES.7a

The student will be able to compare and contrast various types of volcanism and geothermal activity (i.e., Hawaii, Iceland, Mount St. Helens, Catocin Greenstone, Tambora, the Deccan Traps, and Yellowstone).

How Teaching Strategies and Student Activities Address Specific Virginia Standards of Learning

Economics:

Students will explain the effect of scarcity, lack of resources, choices, opportunity cost, price, incentives, supply and demand, production, and consumption on the environment after a volcano eruption. They will show how government intervention would increase after a natural disaster. Students will explain how supply and demand will shift by using supply and demand curves. Students will demonstrate knowledge of the price system and how it will be affected by a natural disaster as well as understand the concept of unintended consequences and how it affects the market economy.

Earth Science

Constructing a model volcano like the volcano that students create in this activity aligns with the Virginia SOL standards of learning for earth science in that the model allows students to understand how ingredients that were put into the volcano can determine the classification of the eruption such as students who added additional materials to their volcano to provide characteristics for more explosive eruptions such as cinder and composite cone eruptions. Furthermore, students will write an action plan for citizens' response to such a catastrophe. This activity is justified by having students understand how geothermal activity in the interior of our planet and the geographic location of some areas provides an increase in the likelihood that an eruption will occur, particularly where more devastating eruptions may occur. This activity also allows the students to compare and contrast the effects of the different types of eruptions.

	<p>Assessment</p> <p>Closure/Review Techniques</p>	<p>When graphing, this is known as a change in supply.</p> <p>Analyze equilibrium changes-Does the event affect demand, supply, or both? Does the event shift the demand or supply curve to the right or to the left? What are the new equilibrium price and quantity, and how have they changed as a result of the event?</p> <p>Multiplier effect: The idea that a small increase in spending by consumers, businesses or government can cause large changes in economic production. The multiplier also works in reverse when spending decreases</p> <p>3. Students copy examples of demand and supply curves into their notebooks as I create them on the board. They are to use colored pencils. Khan Academy could be used to help review/teach the supply and demand concepts: https://www.khanacademy.org/economics-finance-domain/microeconomics/supply-demand-equilibrium</p> <p>4. Place students into pairs to complete the following:</p> <ol style="list-style-type: none"> a. Find a news headline from a newspaper or Internet news site reporting a natural disaster and tape it into your notebook. Then do the following: <ol style="list-style-type: none"> i. Identify a product/service market that might be influenced by the news in a headline. For example, for the headline “College Grads Earn Higher Starting Salaries than Ever Before,” a product/service market that might be influenced is graduation trips to Hawaii or the Caribbean. ii. Identify which curve—demand or supply—is affected by the information. iii. Determine whether the curve shifts, and if so, whether it shifts to the left or to the right. iv. Draw and label a graph with a demand or supply curve for the related product/service market, and show whether the curve shifts to the left or to the right. Below the graph, explain what happens to the curve and why, citing one of the determinates of demand or supply in your answer. <p>5. Notebook check</p> <p>6. Completion of Headline activity</p> <p>7. Review Headline activity and allow students to make corrections if needed.</p>
<p>Homework/Individual Practice:</p>		<p>- Make sure their notebooks are up to date.</p>

Differentiation/ Accommodation Strategies	<p>For those students with IEP's:</p> <p>Support the Activity Provide students with a list of the determinants of demand and supply to use as they complete each phase of the activity.</p> <p>Provide Headlines for Processing Activity Supply students with headlines from newspapers, magazines, or Web sites that they can use to complete the assignment. Underline or highlight key words in each headline.</p>
Materials Needed/Resources	Colored pencils; Graphing paper; Access to computers or newspapers
Reflection	Went well. Students like working in pairs to do the Headline activity. All students used the computer to lookup headlines.

Time:	Lesson Element:	Instructional Outline:
Days 2-5 180 min	Introduction Review Instructional Activities Assessment Closure/Review Techniques	<ol style="list-style-type: none"> 1. Explain the research project on live and dormant volcanos. (<i>See Appendix A</i>) 2. Discuss the effect on the economy from natural disasters. “Changes in conditions due to natural disasters or international events”. It can decrease supply and/or increase demand for various products/services. <i>For example</i>, days prior to the forecasted landfall of a category 5 hurricane, the demand for generators and sand bags will increase. Likewise, after the destruction of a category 5 hurricane the supply of batteries has decrease. 3. Create teams of 2 or 3 students (depending on the size of the class). Distribute the “Volcano Research Project” instruction sheet and rubric for PowerPoint presentations. (<i>See Appendix A</i>) 4. Students are to work together to research an active volcano and one of Virginia’s dormant volcanos...Mole Hill or Trimble Knob. 5. Student teams should complete the research project. 6. A test grade will be given on the research and presentation based on the grading rubric.
Homework/Individual Practice:	Students were told to start bringing in 2 liter soda bottles.	
Differentiation/ Accommodation Strategies	For those students with IEP’s: Support the Activity Peer team if possible. Have resource teacher work with those students with IEPs.	
Materials Needed/Resources	<ul style="list-style-type: none"> • Access to computers • Volcanic activity handout • Rubric 	
Reflection	Went very well. Most did an outstanding job. Received very positive feedback. However, the usual problems with some students not showing up to do the work and others wanting to rely too much on one student completely the team work exist. Next year...if a student does not show up to give the presentation and has an excused absence, they must turn in a written report.	

Time:	Lesson Element:	Instructional Outline:
<p>Day 6</p> <p>45min</p>	<p>Introduction</p> <p>Review</p> <p>Instructional Activities</p> <p>Assessment</p> <p>Closure/Review Techniques</p>	<ol style="list-style-type: none"> 1. Read the poem, No man is an Island by John Donne. Poem can be found at: https://web.cs.dal.ca/~johnston/poetry/island.html 2. Discuss the meaning of the poem. Relate this to economic interdependence. <ol style="list-style-type: none"> a. <i>Interdependence - A situation in which decisions made by one person affect decisions made by other people, or events in one part of the world or sector of the economy affect other parts of the world or other sectors of the economy.</i> 3. Review information about Mole Hill. Show its picture on an LCD projector and talk about the surrounding area, i.e. farms, James Madison University, homes, towns, population, etc. 4. Ask: What if Mole Hill were to erupt today? 5. Distribute activity playing cards (<i>see appendix D</i>) randomly to students. Give each student an instruction sheet (<i>see appendix C</i>) where they will write their answers. <ol style="list-style-type: none"> a. <i>Instructions:</i> Use the card you have been given and locate other cards that would relate to your card. Write down the card you have and the number of cards that would go with yours. Explain how each card would relate to yours. <i>Example: After an eruption the Ben and Jerry's miles away must stop production because they can no longer get milk from the destroyed dairy farm. How many other cards would this effect?</i> 6. Do the following Multiplier Effect Activity <ol style="list-style-type: none"> a. Have one student stand in the middle of the room representing the volcano. b. Have the next row of students make a circle around him/her making sure they touch shoulders. c. Have the next row of students make a second circle and so on until all students are included. d. Have the student representing the volcano start to turn with his/her arms out and when he touches a student they start to turn with their arms out and move outward towards the classroom walls. e. When the last student is touched, all students are far away from the "volcano" but realize they have been effected (touched) by the volcano either first, second, or third hand. <p>Completed handout (appendix C) graded for participation. Participation grade for Multiplier Effect Activity.</p>

Homework/Individual Practice:	Remind students to bring soda bottles.
Differentiation/ Accommodation Strategies	Work with students with IEPs until they are comfortable with the activity.
Materials Needed/Resources	Instruction handouts, Information cards
Reflection	Feedback from students was positive. Make sure to tell “Volcano” to turn slowly. Activities worked well. Students really liked the Multiplier Effect volcano activity. We had to do this one several times because so many wanted to be the volcano.

Time:	Lesson Element:	Instructional Outline:
<p>Days 7-8</p> <p>90 min</p>	<p>Introduction</p> <p>Review</p> <p>Instructional Activities</p> <p>Assessment</p>	<ol style="list-style-type: none"> 1. Trade classrooms with science teacher, Mr. Collins. Mr. Collins has economic students building volcanos. 2. Review students on the concepts of supply and demand. Khan Academy could be used to help review/teach the supply and demand concepts: https://www.khanacademy.org/economics-finance-domain/microeconomics/supply-demand-equilibrium Discuss how natural disasters can affect the economy. Also, discuss the concept of a multiplier effect and how one small change can have far reaching effects. 3. Show a picture of Mole Hill using an LCD projector. See article link below for a picture. 4. Have students discuss what they see and what they think would happen if Mole Hill should erupt in our present day. https://www.washingtonpost.com/local/virginias-volcanic-past-mole-hill-and-trimble-knob/2012/12/15/175a6d5c-44a6-11e2-9648-a2c323a991d6_story.html Read part of article. 5. Conduct the “Volcano” multiplier effect activity from the previous day with this new group of students. 6. Conduct the playing cards activity from the previous day with the new group of students. 7. Move all tables and desks from the center of the room. Have students make a big circle. 8. Conduct the following, “We are all linked activity”. <ol style="list-style-type: none"> a. This requires a big ball of yarn. Pick one student and give the ball of yarn to him/her. b. Have that student go to the person who holds their first related card and explain why he/she believes their cards are related. c. That person holds on to the string and finds their first related card person or second related card person and also explains why they are connected. This person now holds a string. d. This continues until all students have connected with another. Many students will now be holding several strings. e. When everyone has had an opportunity to pick someone, we gather all the string and return to their seats. 9. Next have students explain why so many people had several pieces of string, and how this represents what happens in our economy.

	Closure/Review Techniques	Participation grade will be given science teacher, Mr. Collins.
Homework/Individual Practice:		None
Differentiation/ Accommodation Strategies		One student gets very nervous with activities, so she wrote a paper.
Materials Needed/Resources		Handouts, cards, yarn, LCD and website
Reflection		Feedback from students was positive. They liked the “off you seat” activities. Good activity

Time:	Lesson Element:	Instructional Outline:
Day 9 45 min	Introduction Review Instructional Activities Assessment Closure/Review Techniques	<ol style="list-style-type: none"> 1. Wrap up the unit by reviewing the lesson's main topics: <ol style="list-style-type: none"> a. Supply and Demand b. Determinants of Supply and Demand c. The Price System d. The Multiplier Effect e. Economic Interdependence 2. Allow time for students to complete the Volcano Risk Reduction Plan for Mr. Collins (<i>see appendix E</i>) 3. Give Volcano Risk Reduction Plans to Mr. Collins for Grading
Homework/Individual Practice:	None	
Differentiation/Accommodation Strategies	Students with IEPs could elect to list one positive and negative instead of two.	
Materials Needed/Resources	None	
Reflection	Students loved making the volcanos	

Introduction: Types of Volcanoes and Eruption Hazards-Mr. Larry Collins

Day 1:

1. Teacher will introduce class with a focus on primary and secondary hazards associated with volcanic eruptions. Particularly, a video clip (<https://www.youtube.com/watch?v=Cvjw9nnwXY>) that focuses on the effects of a pyroclastic flow on a community from Mt. Unzen, Japan and the eruption that killed the volcanologists that were studying the eruption (3-5 minutes).
2. Next, the teacher will display pictures of shield, composite, and cinder cone eruptions on the projector (3-5 minutes). After the three pictures of eruptions are displayed (similar images can be found at <http://skywalker.cochise.edu/wellerr/students/blue-lava/project.htm>), the teacher then introduce how the students will model the volcano with the supplies that are on the table in the front.
3. Using materials from the list below, the teacher will then inform students of what each item from the supply list could represent. (see list below)
4. Students are then free to utilize other materials that they may have brought to class to add innovation and creativity to the eruption style. For example, several students may choose to add larger sized gravel in order to represent larger fragments that would come out of their eruption when the eruption exploded.
5. Students then construct their model volcanoes in class. (20-25 minutes)

Day 2:

1. The teacher will instruct students to retrieve their volcanoes from the front of the classroom and finish decorating them. (5-10 minutes)
2. The teacher will then distributed 3/4 of a cup of vinegar to each group. Teacher will walk around class and "explode" eruptions one at a time so students can see differences in the explosiveness of each eruption. (15-20 minutes)
3. Students will then clean up their eruptions and prepare for the conclusion section of today's lesson.

Conclusion:

4. Students are asked to write an action plan based upon their eruption and how it affected the citizens (army soldiers) and surrounding area/community.
5. Students will consider the community that they live in and how this volcanic eruption simulation is comparable to an eruption that could happen in a nearby location. Please see *appendix B* for a sample grading procedure that can be used for this task.

Materials:

- 2 liter bottle (to model volcano)
- Bird Seed (represents ash)
- Construction Paper (to decorate bottle of the volcano)
- Markers (for decorative purposes)
- Plastic Army Soldiers (represent citizens affected by eruption)
- Vinegar (react with baking soda to produce eruption)
- Baking Soda
- Food coloring

Preview YouTube video Dome collapse and pyroclastic flow at Unzen Volcano
<https://www.youtube.com/watch?v=Cvjw9nnwXY>

Evaluation of Student Learning

Evidence of student learning is within section Instructional Process and in appendices.

Volcano Research Project

Appendix A

The purpose of this project is to show the effect of a natural disaster on a nation's economy. You will research two volcanos, one active and one dormant. For the dormant volcano you are to research either Mole Hill or Trimble Knob which are both in Virginia.

- **Go to Google Earth and search volcanos. One active anywhere on earth and one from Virginia, either Mole Hill or Trimble Knob.**
- **Pick one of each to research**
- **Must include in your PowerPoint**
 - **The area before and after eruption**
 - **Population before and after eruption**
 - **What type of land mass**
 - **What type of business/industry how many**
 - **How much water and what type (ocean, rivers, etc.)**
- **How much destruction**
 - **How long was the eruption**
 - **How far did it reach**
 - **How many people were killed if any**
- **Aftermath**
 - **How long until the area was useful again**
 - **How many people did it effect, near and far away**
 - **Were there any unexpected consequences**
 - **What economic effects do you think this has on the immediate area and surrounding area, and the far reaching areas**
- **Additional Information**
 - **Must be at least 10 slides long**
 - **Must include pictures**
 - **Must include supply and demand curves with explanations**
 - **Proof read**
 - **Include Works sited information on last slide**
- **Present to the class**
 - **All members present**
 - **Do not just read from slides**
 - **Speak clearly and be easily heard**

Appendix B

GRADING RUBRIC FOR ECONOMIC RESEARCH VOLCANO PROJECT

STUDENT NAME: _____

KNOWLEDGE: 4 3 2 1 0

Shows an understanding of the economic concepts such as supply and demand, the effect on the economy from natural disasters, supply shifters, and ripple effect. Information was both relevant and factual to the project at hand. Able to answer questions.

LENGTH: 4 3 2 1 0

Project was the requested appropriate size.

CONTENT: 4 3 2 1 0

Topic covered thoroughly, student answered all of the information requested of him/her. Enough information was given to understand topic. Did not exclude any important information or include any unnecessary information

DESIGN/FORMAT 4 3 2 1 0

Very creative and easy to see, understand and follow information presented.

SPELLING/GRAMMAR/PUNCTUATION 4 3 2 1 0

Project did not include any spelling or grammatical errors.

PARTICIPATION: 4 3 2 1 0

Does his or her “fair share” in presenting the material to other students in class and answer any questions.

TOTAL _____

23-24 A 90% - 100%

21-22 B 80%-89%

18-20 C 70% - 79%

16-17 D 65% - 69%

0-15 F 55%-64%

Activity 1

Appendix C

Use the card that you have been given and locate other people with cards that will go with your card. Write down the card you have and the number of cards that go with your card. Explain how each card would relate to your card.

Your card - What does it say?	
1st Card – What does it say?	How does it relate to your card?
2nd Card – What does it say?	How does it relate to your card?
3rd Card – What does it say?	How does it relate to your card?

Appendix D
Playing Cards

<p>You are a member of the Army National Guard.</p> <ul style="list-style-type: none"> • You also work for Ben and Jerry's • You can't be laid off from the Army National Guard. So, others must be laid off. 	<p>Ben and Jerry's</p> <ul style="list-style-type: none"> • Stops production due to shortage of milk. • Lays off employees at the manufacturing plant. • Lays off employees at each store.
<p>You work for a building construction company in Florida.</p> <ul style="list-style-type: none"> • The company you work for supplies building materials. 	<p>First National Bank of Virginia</p> <ul style="list-style-type: none"> • Decides who will be approved for loans. • Decides appropriate interest rates for each loan based on risk level.
<p>You are a member of a family that lives in Galax, VA.</p> <ul style="list-style-type: none"> • Your family wants to obtain a loan from the First National Bank of Virginia. 	<p>James Madison University must close for two years.</p> <ul style="list-style-type: none"> • Lays off all employees <ul style="list-style-type: none"> ○ 1,336 full time ○ 345 part time • JMU is the largest employer in the area.
<p>You are a high school senior at Anywhere High School</p> <ul style="list-style-type: none"> • You applied and were accepted into JMU with a full scholarship. • It is past the deadline to apply for scholarships at other colleges and universities. 	<p>Friendship Hospital</p> <ul style="list-style-type: none"> • Want to hire nurses and doctors. • Offering a pay incentive.

<p>You are a Dairy Farmer.</p> <ul style="list-style-type: none"> • You live two miles from Mole Hill. • You earn \$85,000 a year in income. • You have \$1,000,000 in insurance. • You lost \$250,000 in livestock and property. • You sell milk to Ben and Jerry's • You and your family survive the volcano eruption. 	<p>You are a Sheep Farmer</p> <ul style="list-style-type: none"> • You live two miles from Mole Hill. • You earn \$75,000 a year in income. • You have no insurance. • You lost \$175,000 in livestock and property. • You sell wool to Alibaba in China • You and your family survive the volcano eruption.
<p>Tractor Supply Store</p> <ul style="list-style-type: none"> • Located 5 miles from Mole Hill • Yearly profit = \$100,000 • Lost \$150,000 in inventory • Insured for \$100,000 • The store owner and two employees die in the volcano eruption. 	<p>Mom and Pop Store</p> <ul style="list-style-type: none"> • Sells to JMU community • Yearly profit = \$50,000 • Lost \$35,000 in inventory • Insured for 20,000 • One owner and three employees die in volcano eruption.
<p>State Famer Insurance Company</p> <ul style="list-style-type: none"> • Insures the Tractor Supply Store • Insures the Mom and Pop Store • Insures the Dairy Farmer • Insures the Jones Family 	<p>Federal Emergency Management Agency</p> <ul style="list-style-type: none"> • Determines how much money to give volcano victims • You have a total of \$500,000 to distribute to victims. • You do not have to distribute all \$500,000.
<p>You are a member of the Jones family</p> <ul style="list-style-type: none"> • Four family members • Your family earns \$102,000 a year. • Your family lost everything. • You and your family survived the volcano eruption. • You were insured for \$75,000 	<p>Alibaba Company</p> <ul style="list-style-type: none"> • Located in China • Need to purchase wool • Cannot fill existing contracts with J.C. Penny. • Lays off 50 employees.

<p>Volcano Eruption</p> <ul style="list-style-type: none"> • The lava flow is 2,000 – 3,000 feet. • Destroys train station and tracks • Want to hire employees to rebuild tracks. 	<p>Lumber Company</p> <ul style="list-style-type: none"> • Increases timber production
<p>Army National Guard</p> <ul style="list-style-type: none"> • Calls 1,000 troops to report for duty. • Troop members work for various companies. 	<p>Terrorist Attack</p> <ul style="list-style-type: none"> • Washington, DC.
<p>United States Marine Corp.</p> <ul style="list-style-type: none"> • 2,000 troops called to help for reconstruction. 	<p>All U.S. Airports</p> <ul style="list-style-type: none"> • Shut down, no flights in or out.
<p>Medicine needs to be transported to disaster sites.</p>	<p>Film crews were set to make a movie at JMU.</p>