

TAH Lesson Plan

Author(s): Dana Bowers

Subject: Geography

Grade Level: 6th

Class Time Required: Four 50 minute class periods

Unit Title: Living With Geography

Essential Question:

1. How do humans adapt to Natural Disasters?
2. How does the Geographical Theme of Place using landforms and natural disasters affect lifestyle decisions?

Brief Description of Unit:

In this activity, students identify the causes and effects of various natural disasters and how humans adapt to places that are susceptible to these catastrophic events. They will evaluate informational texts in order to form an opinion/claim.

Objectives/Common Core Reading and Writing Standard(s):

<http://dese.mo.gov/divimprove/curriculum/GLE/SSGLE10.20.04.pdf>

www.corestandards.org/ELA-literacy

NCSS Theme of People, Places, and Environment:

Today's students are aware of the world beyond their personal locations. As students study this content, they create their spatial views and geographic perspectives. Social, cultural, economic, and civic demands require such knowledge to make informed and critical decisions about relationships between people and their environment.

Course Objective: The learner will review and study the geography terms and features of the world. GLE-EG5B6, SS5 1.4, 1.5, 1.10

CCSS RI.6.1, RI.6.8, W.6.1

Material Needed:

Anchor Texts: Hands on History-Geography Activities (short excerpts for each natural disaster will be read and annotated)

Support Texts: Students will locate a primary or secondary source highlighting an actual natural disaster catastrophe somewhere in the world and present their findings to the class utilizing the Five Themes of Geography (Karen Doolin's lesson)

Technology Needed:

Students will utilize computers to research all three writing prompt options provided.

Instructional Strategies: (Teacher Methods)

Using reading strategy of annotating texts while reading
Utilizing a graphic organizers: a matrix to synthesize key information, a pro/con chart
Displaying visuals and illustrations of Natural Disasters
Group Collaboration and discussion
Peer Editing

Instructional Activities: (What students do)

Students will use the reading strategies of close reading and annotating to take notes in their natural disaster matrix. After brief discussion and sharing of matrix notes with a partner, students will respond to a rigorous and relevant writing prompt and use the internet to research three locations prone to natural disasters. Students will peer edit student reflections and writings using a highlighting strategy

Suggested Timeline:

Class period (minutes): Four 50 minute class periods

Unit Resources:

For each internet source provide: web address, author & title, brief synopsis of the source.

Hands on History-Geography Activities, Sarah D. Giese, Shell Education
This is a teaching resource book utilizing basic natural disaster information to be paired with matrix. This will create background knowledge for the writing prompt.

Assessment Descriptions: Write a brief overview here; attach scoring guides & keys.

Students will be assessed by making an claim using support from the text and taking special consideration physical features and the threat of natural disasters. See attached scoring guides and student samples.

Natural Disasters Matrix

Disaster	Affected Regions	Causes	Effects and Adaptations

Natural Disasters Matrix *(cont)*

Disaster	Affected Regions	Causes	Effects and Adaptations

Natural Disasters Matrix Key

Disaster	Regions	Causes	Effects and Adaptations
Hurricane	Caribbean islands, southeast coastal United States	warm-air currents meeting cold-air currents over warm water	high winds; heavy rains; storm surges
			hurricane warning systems; boarding up homes; evacuation; homes on stilts
Flood	any low-lying area or coastal area	long, heavy rains or sudden snow thawing	water damage to property; erosion of coastlines and river banks
			houses on stilts; sandbagging of river banks; evacuation
Tornado	Central United States ("Tornado Alley")	warm- and cold-air currents meeting over land; can be caused by hurricane or thunderstorm	funnel-shaped wind cloud with very fast winds; can move fast or slow
			going to low ground (a cellar) or a safe room; evacuation
Blizzard	middle to high latitudes (north and south)	high-pressure system followed by low-pressure system	strong winds; high drifts of snow; heavy snowfall can occur
			shovels, bags of salt, and snow blowers ready; remaining inside during blizzards
Wildfire	dry areas with forest or scrub vegetation	sometimes lightning; more often human carelessness	scorched earth, destruction of homes, wildlife, and vegetation; dense smoke
			use fire-resistant building materials; evacuation

Natural Disasters Matrix Key *(cont.)*

Disaster	Regions	Causes	Effects and Adaptations
Drought	anywhere, especially areas around deserts	lack of rainfall for extended periods of time	destruction of crops; lack of food for people and wildlife; cracked earth; dust storms
			irrigation systems; food aid from other countries; water rationing
Tsunami	ocean and coastal areas	underwater disturbance like earthquake, volcano eruption, or mudslide	huge waves that destroy coastal areas; erosion of coast; heavy flooding
			tsunami warning system (Pacific Ocean only); evacuation—head inland for higher ground
Earthquake	areas along faulting plate boundaries	faulting (two plates sliding past each other)	ground shaking; buildings collapse; cracks in the earth opening up; tsunamis
			buildings built to prevent damage (springs, rollers); staying put; getting under solid cover
Volcano	areas near subducting plates; the Pacific "Ring of Fire"	subducting (one plate sliding under another) or diverging (plates moving away from each other)	hot liquid lava and ash; explosion of rocks; fires, mudslides, earthquakes, tsunamis
			fire-resistant building materials; evacuation—avoiding low-lying areas, staying upwind of volcano

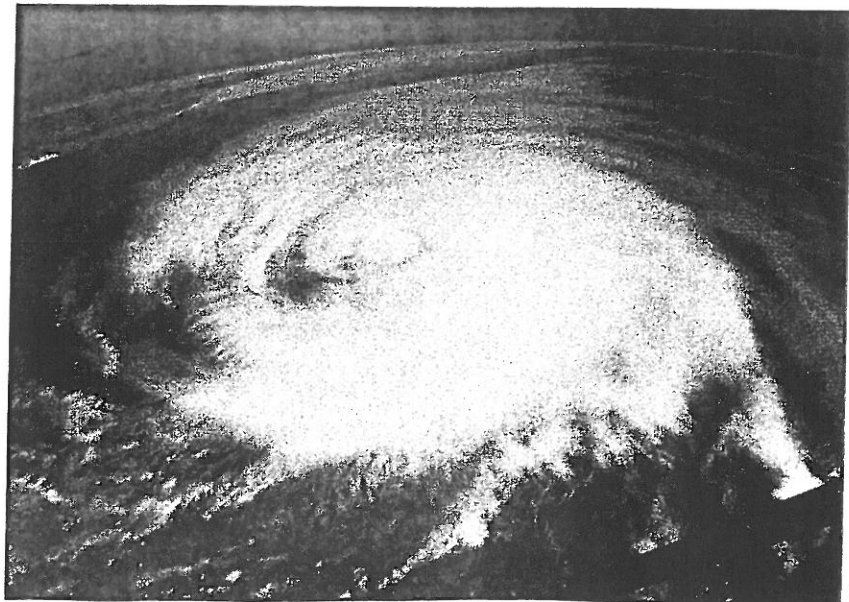
Natural Disasters Information: Hurricane

Hurricanes are storms created over large bodies of water when a warm-air mass collides with a cool-air mass. In parts of the Pacific Ocean, hurricanes are called typhoons. A hurricane forms a circular storm, with a calm center called an eye. In order for a storm to be considered a hurricane, its winds must blow at 74 miles (119 km) per hour or more.

Hurricanes can last more than two weeks over the water. Most hurricanes that form in the Atlantic Ocean threaten Caribbean islands and the southeastern United States, although some hurricanes can travel up the entire eastern coast. Usually, however, the storms that travel that far do not reach land. They stay over the ocean and eventually run out of energy as they reach colder and colder waters.

Hurricanes can cause much destruction. The storm itself can bring heavy rains, high winds, and large storm surges. (A storm surge is a rise in sea level that affects coastal areas and areas along rivers.) The results of these effects are flooding, downed power lines and tree limbs, power outages, and damage to buildings. In 2005, a large Hurricane Katrina caused billions of dollars of damage to the Gulf States in the United States.

People have long lived in areas that get hit by hurricanes. In many of these areas, there are established evacuation routes, marked by roadside signs. In addition, there are hurricane warning systems in place to let people know that the storm is coming so that they can leave before it hits. Another way that people adapt to hurricane-prone areas is to build houses on stilts. The stilts keep the homes above the level of the rising water and limit the damage to the homes. Once a hurricane is on its way, many people board up their homes and businesses to protect them.



Courtesy of www.photos.com

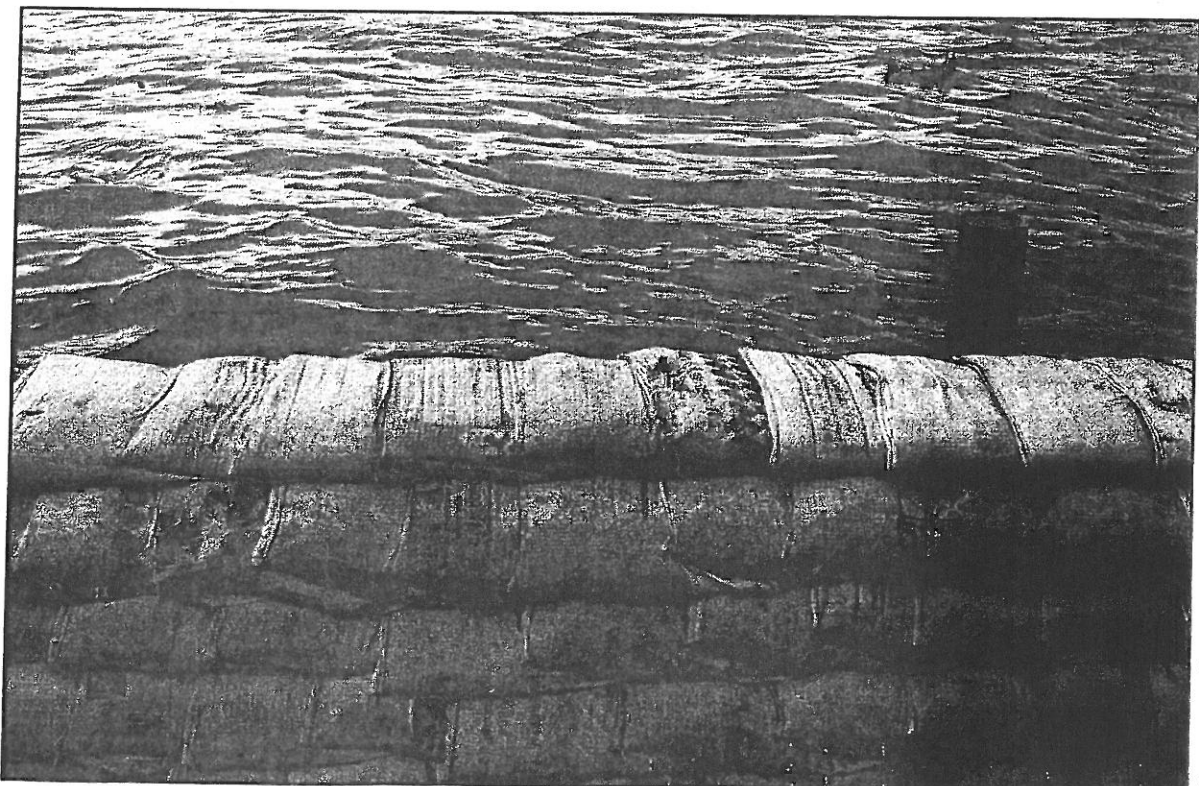
Natural Disaster Information: Flood

Floods are rising water levels that overflow their usual boundaries. Flooding can occur in rivers or along coastlines. Low-lying areas near large bodies of water are especially at risk for flooding on a regular basis, but any area can experience flooding under the right conditions.

Flooding is caused by an increase in the volume of water in an area. The increase can be caused by heavy rains or by rapid melting of snow in higher areas. Water levels can rise quickly or slowly, depending on the source. In general, it takes a few days for flood conditions to occur, so there is usually plenty of warning time.

Flooding can cause water damage to buildings, including damage from mold and mildew. In addition, flooding can erode coastlines and river banks, taking away from the total land available for people's use.

Because flooding usually takes several days to occur, people can prepare for floods. Placing sandbags along river banks can help contain rising water. As with hurricane areas, some people in flood-prone areas build their houses on stilts to prevent water damage. In the case of flash flooding (really fast flooding), people's only option is to evacuate the area as fast as possible. In 2005, Hurricane Katrina damaged New Orleans's protection from the high waters. New Orleans was flooded and many parts of the city were destroyed.



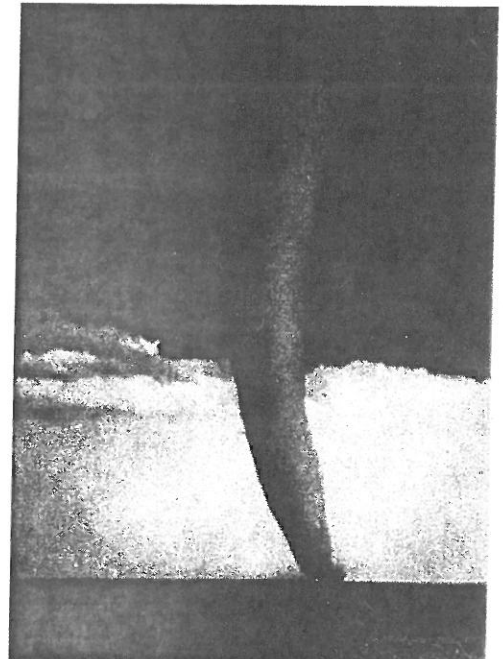
Natural Disasters Information: Tornado

A tornado is a windstorm that occurs over land. Like a hurricane, it is caused by the collision of a warm-air mass and a cool-air mass. However, tornadoes usually form over land. Tornadoes that form over water are called waterspouts, and they are usually weak compared to the land versions. Tornadoes often occur with thunderstorms and can be caused by hurricanes.

A tornado is a funnel-shaped cloud that moves erratically (unevenly) across the ground. A tornado can move fast or slow, and it can “jump” from one area to another. Tornadoes can cause widespread destruction in a very short time. Winds in a tornado can reach up to 300 miles (483 km) per hour. The typical tornado—gray or black in color—is actually a combination of the tornado’s winds (which have no color) and the debris that the tornado has picked up along its route (dust, dirt, etc.).

Tornadoes form over flat land where they can pick up speed. “Tornado Alley” is a term used to refer to the central plains states. This is an area extending from Nebraska southward through Kansas and Oklahoma into central Texas. States in this area are at the greatest risk for tornadoes. Tornadoes can occur anywhere in the world. However, the United States by far suffers the greatest damage from tornadoes each year. The largest tornado in U.S. history was the tri-state tornado of March 18, 1925. It killed almost 700 people.

Because tornadoes are hard to predict and track, there is not a lot that people can do to prepare for them. Evacuating an area after a tornado has been spotted, or heading to a safe place such as a basement or “safe room” (a specially constructed tornado-proof room) are people’s only options.



Courtesy of www.clipart.com

Natural Disasters Information: Blizzard

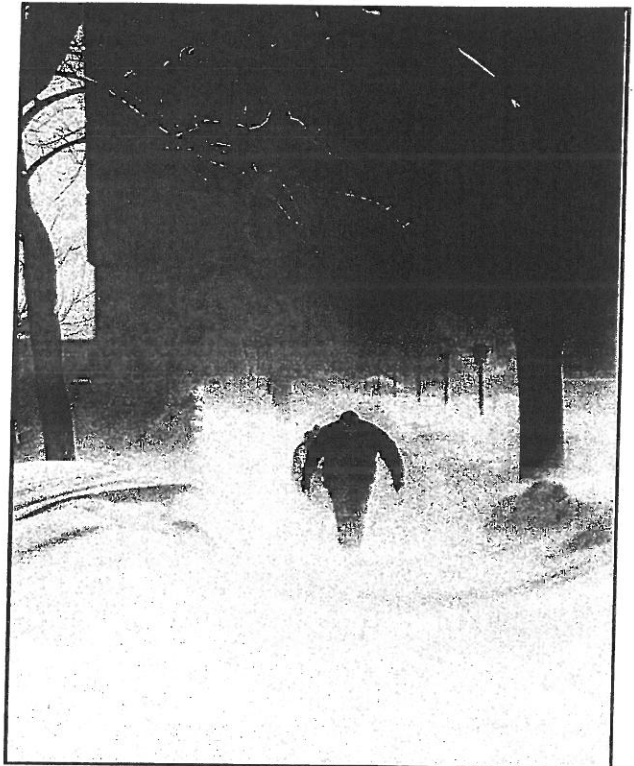
A blizzard is a winter storm with high winds and drifting or falling snow. Drifts can reach several feet above the actual snowfall. For example, if a snow storm drops 7 feet (2.13 meters) of snow, drifts during a blizzard may reach as high as 12 feet (3.66 meters). Cold temperatures and low wind chills (how cold it feels with the wind, as opposed to the actual temperature) accompany blizzards.

Blizzards are caused by a high-pressure system, which may bring snow, followed by a low-pressure system, which brings wind. Because of the blowing snow, visibility may become limited. This makes driving very dangerous. In a blizzard, it is best to stay indoors if at all possible because of the limited visibility and the wind chill.

Areas that commonly receive blizzards are those areas in middle to high latitudes. Areas near lakes can also receive "lake-effect" snows during blizzards. Lake effect means a sudden, heavy snowfall which results from the warmer, wetter air over the lake meeting the colder, drier air above it.

Like floods, there is usually a fair amount of warning with blizzards. To prepare for a blizzard, people get their shoveling supplies (shovels, snow blowers, bags of salt) and stock up on supplies such as food and batteries. It is also important to prevent the pipes in a house from freezing by wrapping them to insulate them and by leaving the taps open just a little.

In February 2006, 26.9 inches of snow fell on New York City. The city was prepared though. The students in the city went to school the very next day!



Courtesy of www.photos.com

Natural Disasters Information: Wildfire

Wildfires are fires that usually begin in uninhabited areas of forest and eventually reach areas where people live. Wildfires can burn along the forest floor or among the tops of the trees, but the result is the same: acres of destroyed wildlife and vegetation and ruined homes.



NPS Photo by Jeff Henry

Unlike most natural disasters, wildfires are most often started by the carelessness of human beings. Campfires that have not been properly put out and cigarettes or matches tossed in the woods start many of the nation's wildfires. Lightning can cause wildfires, too, which is why they are considered a natural disaster. Far more frequently, however, it is people who cause these huge, destructive fires.

Wildfires can occur anywhere there are people and vegetation, but they are more frequent in dry areas, especially areas experiencing drought. Forests and scrub vegetation (vegetation found in desert areas) are most at risk for wildfires.

These fires destroy the area's vegetation and wildlife, scorching the earth and making it difficult for new vegetation to grow. They also ruin people's homes. As with other types of fire, the best measures people can take to prepare for wildfires is to try to prevent them. Making sure campfires are completely doused, along with refraining from smoking in forest areas, goes a long way in preventing forest fires. In addition, people can use fire-resistant materials to build their homes. Stone walls and patios, along with swimming pools, can help to reduce the risk of fire damage to a home.

In the summer of 1988, there was a huge wildfire in Yellowstone National Park. Actually, it was fires all burning at the same time. Almost 25,000 people helped stop the fires. This was the largest firefighting effort in United States history.

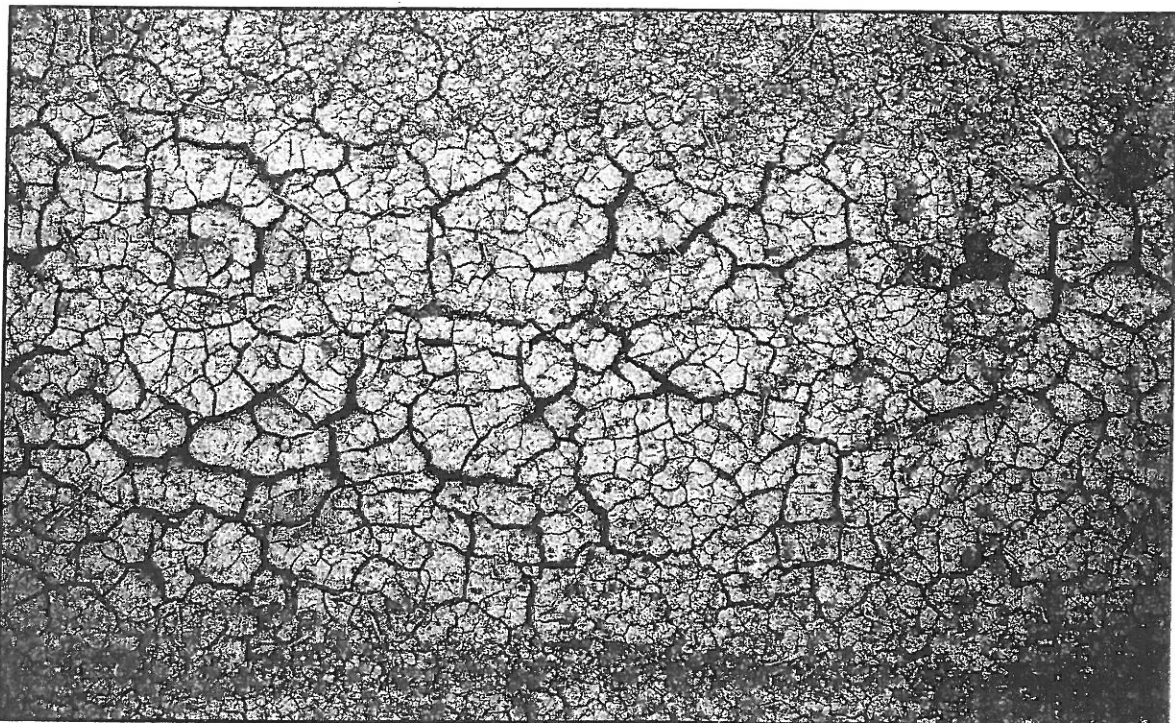
Natural Disasters Information: Drought

A drought is a long period of time with little or no precipitation. In temperate regions, a drought is defined as 15 days in a row with less than 0.01 inches of rain. Most areas experience short periods of drought during a year. But when a drought goes on for months or years, it spells disaster for the people who live there. Areas such as those surrounding deserts are most at risk for drought conditions.

Droughts can cause widespread destruction of people, wildlife, and vegetation. Without enough water to grow crops, people suffer from starvation. In addition, water is necessary for all life. Without an adequate supply, plants, animals, and people are all at risk of dying. Dust storms are also created when the region's vegetation dies off. There are no longer any plants to hold the soil in place, and erosion takes over. Cracks form on the surface of the earth when there is not enough water to keep it whole.

People can prepare for droughts by rationing (or limiting) their use of water. In areas of extreme, extended drought, irrigation systems can be put into place. Organizations such as the Peace Corps send volunteers to areas suffering from extended drought to help local people build and run such systems. Other nations also help drought-affected areas by sending food supplies.

The states in the West have been in a drought for many years. In fact, the U.S. Geological Survey claims this is the worst drought in United States history.

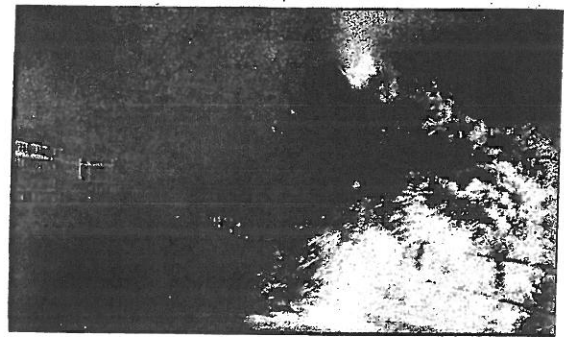


Courtesy of www.photos.com

Natural Disasters Information: Tsunami

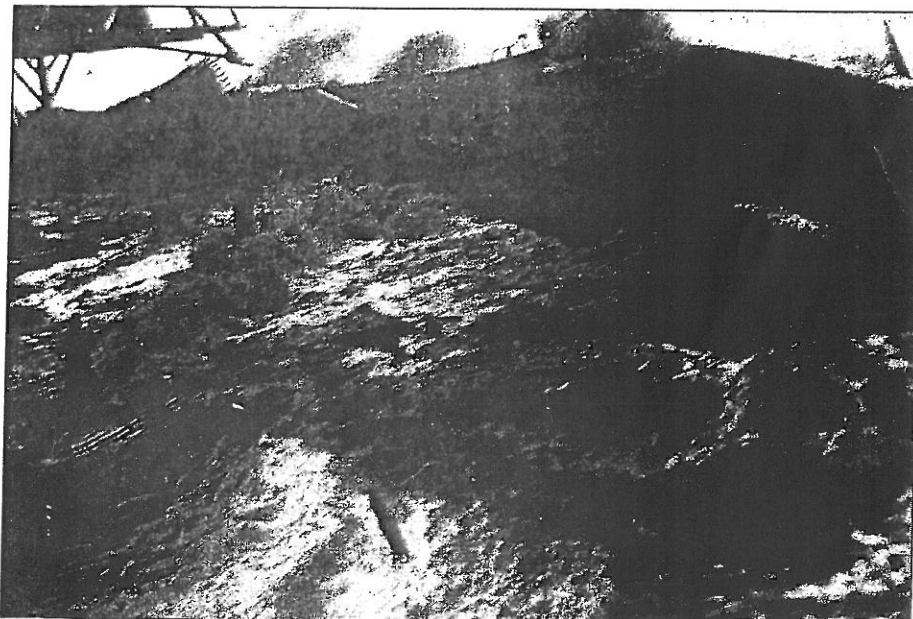
A tsunami is a huge ocean or sea wave, caused by an underwater disturbance. Earthquakes, volcanic eruptions, and mudslides under the ocean or sea floor can cause tsunamis. On the shoreline, you can see the water recede (pull back) before a tsunami hits. While this action can warn people that a tsunami is about to hit, it does not leave much time to prepare.

Areas along the coast of an ocean or sea are at risk for a tsunami. This is especially true in the Pacific Rim, where the Ring of Fire frequently experiences underwater earthquakes and volcanoes. Tsunamis are more frequent in the Pacific Ocean than in any other ocean, although some of the largest tsunamis, such as the one on December 26, 2004, have occurred in the Indian Ocean. Tsunamis have wreaked havoc on coastal areas in all of Earth's oceans and seas.



Courtesy of www.clipart.com

Tsunamis cause erosion of the coastline, as well as heavy flooding, sometimes miles inland. In areas of the Pacific Ocean, there is a tsunami warning system in place, much like a hurricane warning system. An alarm goes off to warn residents of an impending tsunami. Once warned, people's only course of action is to evacuate the area, heading inland for higher ground.



Tsunami in Hawaii, 1946
Courtesy of the National Oceanic and Atmospheric Administration/Department of Commerce

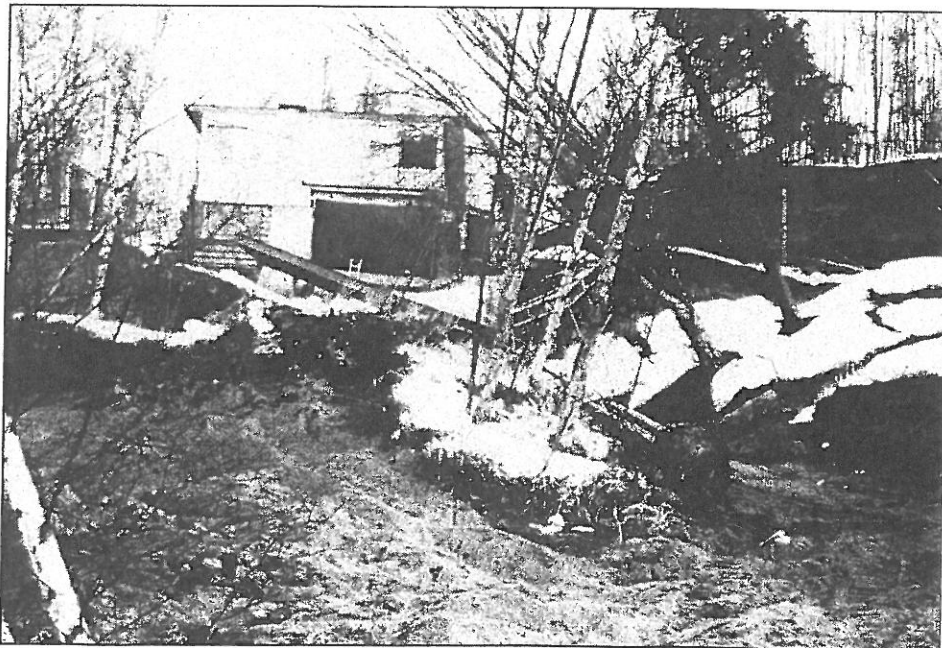
Natural Disasters Information: Earthquake

Earthquakes are disturbances under Earth's surface that can result in violent shaking and swaying of the surface. They are caused when two plates slide past each other. This type of plate movement is called *faulting*. In the United States, one of the most famous fault lines is the San Andreas Fault in California. Earthquakes can also be caused by diverging plates, such as along the Great Rift Valley in eastern Africa.

Because Earth's surface is made up of many moving plates, earthquakes are felt throughout the world. Only about one-fifth of all the world's earthquakes are strong enough to be felt by people. Of those that can be felt by people, only about one out of a thousand cause noticeable damage.

Earthquakes, as the name suggests, cause the ground to shake and sway. Buildings can sometimes collapse in a strong earthquake; however, many buildings in areas where earthquakes are frequent are built in a way that minimizes damage to the building. For example, large buildings in Tokyo are built on giant springs or rollers that absorb some of the movement from the quakes. Earthquakes can open up the ground, and they can also cause tsunamis if they occur underwater.

People can try to evacuate an area if an earthquake is occurring, but since it is difficult to predict earthquakes, there is not usually much time to plan an escape. The safest place to wait out an earthquake is under a reinforced piece of furniture (such as a large table) if there is one nearby. It is not wise to try to move to another location during an earthquake.



Earthquake damage in Alaska, 1964
Courtesy of the National Oceanic and Atmospheric
Administration/Department of Commerce

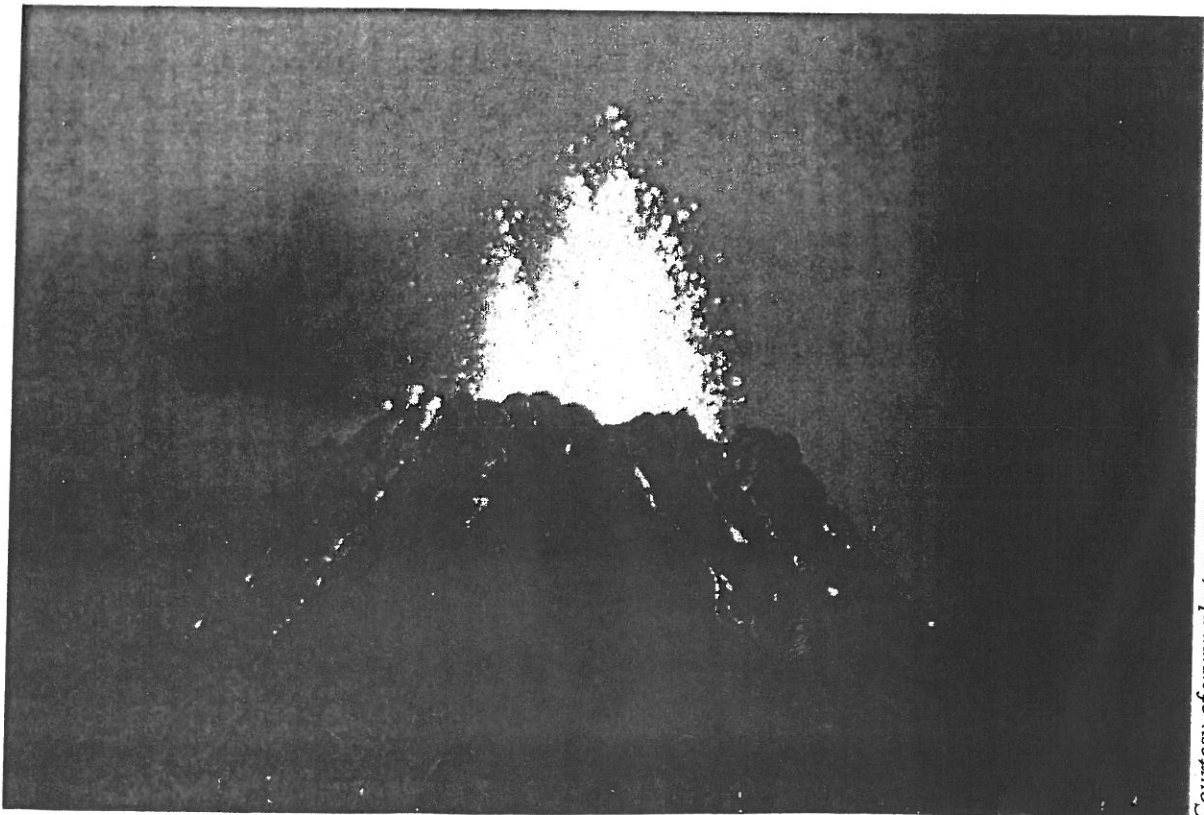
Natural Disasters Information: Volcano

Volcanic eruptions are blasts of fiery lava and rock from deep below Earth's surface. They can create huge clouds of hot ash that travel many miles from the original eruption. In addition, volcanic eruptions can cause fires, mudslides, earthquakes, and even tsunamis if the eruption occurs underwater.

Areas that are prone to volcanic eruptions are those along subducting or diverging plate boundaries. The Pacific Ring of Fire is a particularly active volcanic area, due to the many plate boundaries surrounding the area.

Evacuation continues to be the best way to prepare for an eruption. However, volcanoes can be hard to predict. Sometimes a volcano will give signs that it is about to erupt. In those cases, leaving the area immediately is the best way to prepare. When evacuating an area near a volcano, people look for higher ground that is upwind of the volcano (the wind blows from the person toward the volcano). Once out of the area, people have little to do but wait for the eruption to stop.

As with wildfires, using fire-resistant building materials can increase the chances for a building or home to survive a volcanic eruption. Pools, patios, and stone walls can help keep hot lava flows and fires from destroying property.



Option #1– On the island of Hawaii, near Mount Kilauea, an active volcano

Looking out of your front window, you see the Pacific Ocean, and looking out of your back window, you see Mount Kilauea, one of many active volcanoes throughout this archipelago state. Being located in the tropics, Hawaii has a consistent climate, with warm and mild temperatures all year long, and both dry and rainy seasons. The environment provides for fun with swimming, deep sea fishing and surfing. Watch out for those lava rocks on the beach though, they can be pretty sharp! You may also want to keep an eye on that volcano down the road, it is very active. Just 18 years ago, the town of Kalapana was completely destroyed in one of these eruptions, and several of its residents could not escape. Plus, since Hawaii is prone to seismic activity, which is movement of the earth's tectonic plates, there is also a strong chance for tsunamis to occur, as a result of earthquakes on the sea floor. Remember these kinds of seismic events can strike quickly and without warning!

Option #2- near New Orleans, Louisiana, in the Mississippi River delta

If you are looking for culture and excitement, then New Orleans is the place for you! Not only will you find the most delicious and spicy Cajun food here, but we also have the country's largest Mardi Gras celebration! And if you are looking for adventure, try alligator hunting in the Bayou. The "bayou" is what the local residents call the Mississippi delta where it spreads out down here. See down here, the river is not just a stream, but a huge area of water that spreads out as it empties into the Gulf of Mexico. This huge area is good for fishing of all sorts, not to mention being able to go all kinds of places on a boat. You do need to watch out for some flooding, all that rain from upstream flows down here and has no place to go but your back yard. You also need to be aware of storm threats from the occasional hurricane. They may not come here often, but when they do— watch out!

Option #3– A small valley in the Rocky Mountains, outside of Denver, Colorado

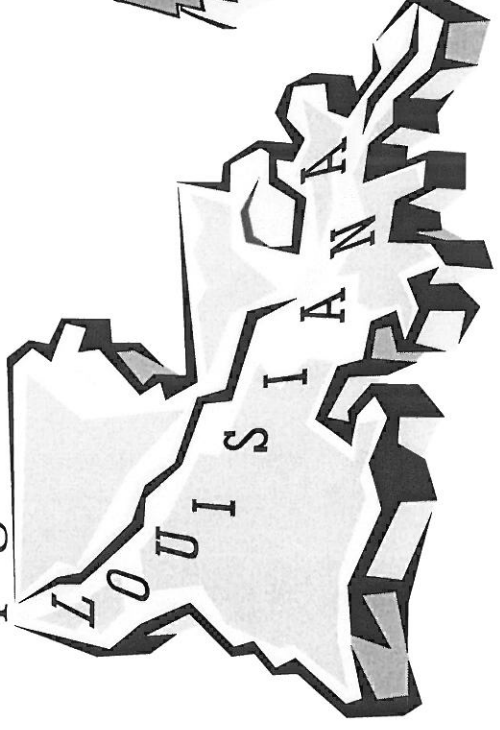
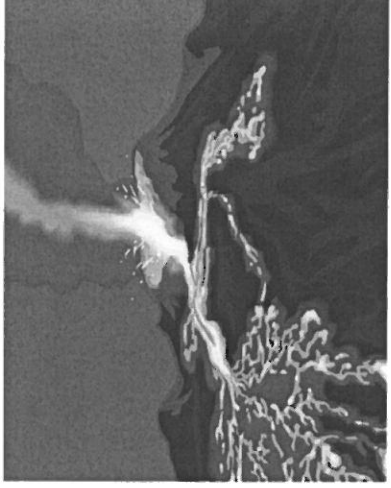
If you like outdoor adventure, fresh air and beautiful scenery, then this is the place for you! Living in this valley really gives you the chance to experience wilderness, you may even see a bear in your back yard! Some days in the winter, it can snow so much; you have to take the snowmobile to work, but that doesn't mean the kids get snow days, we get used to the snow around here! The environment is one of the best, lots of fresh clean air that has very little pollution. Watch out for those snowstorms and blizzards though, sometimes it can snow so much, that our grocer shipments don't make it through for days, so we have to be well-stocked and prepared. Plus, if you go up the mountain and out of the valley, you have to be very careful, avalanches could be triggered at any time! Just be cautious and careful when you hike or mountain climb!

“Living With Geography”

Introductory Statement: Should introduce your reader to the topic of the paragraph.

Example: Landforms are important to consider when you are looking to move to a new place. Different landforms can influence the way I dress, the sports I play, or even my personal safety!

Unpack the Question: Answer ALL parts!! Check #'s 1-4 on the top of your page!



" Thank you! " I said to my boss, " I'll let you know as soon as my husband and I decide! "

That was six months ago, and I only have three more to make my decision on where to go, sell my house, pack up and go. I grew up here in Blue Springs, Missouri so it will be hard to leave my parents and sisters. I haven't told anyone except my husband about my job transfer.

I'm a famous fashion designer known worldwide and I have made and designed over 150 lines of clothing. I've worked with people such as the Jenners, Kylie and Kendall, and the Kardashians, Kim, Khloe, and Kourtney. I've also designed for famous musicians like Beyonce and actresses like Jennifer Lawrence.

Apart from my job, I also have to take in consideration of my family when I'm deciding on where to go. I have a husband since 2022, named Niall Horan. Sound familiar? Yeah, he used to be in the band One Direction. They split after Zayn and Perrie had their first baby about 5 years ago, Mia Hope Malik, just in time.

After a month or so the news got out about Niall and I's first child, Meghan Nicole Horan. Megs is five now. She has caramel colored hair, and crystal blue eyes. My three year old, Abigail Faith Horan, has dirty blonde hair with emerald green eyes. Mason Austin Horan is my youngest at ten months. His hair is super dark brown and he has chocolate eyes. You can't even tell they are all related!

Niall and I wanted to move to Hawaii, but that's a huge risk. An active volcano in back yard? No thank you! Although the ocean view in front of my house would be amazing, those sharp rocks and deep water isn't a safe environment for my young kids. I would love to have warm weather all year round but I LOVE snow and so does my family. It just wouldn't be the same without winter.

I also put Louisiana into my options. Louisiana has amazing Cajun food. They also have a large Mardi Gras celebration which would be fun but I don't think that would be a good environment for my children. Louisiana has a nice large body of water called the Mississippi River Delta. But the locals call it the bayou. I do love fishing and boat riding but that would be a challenge with

younger kids. Alligators could even be in my back yard. That's a problem for me. One of my girls could walk outside and get swallowed by one! Floodings, and hurricanes are at risk there too.

My final option is right outside of Denver, Colorado. I would love to live here. The fresh air with little pollution would help Megs and Abby breathe better with their asthma. Colorado has the most beautiful scenery I've ever seen in my life. In Colorado there is alot of snow, with high chances of blizzards and snowstorms. We could get so much snow that I might have to take a snowmobile to work some days, but I don't mind. Mountain views would be beautiful to stare at from my kitchen window. With so much snow, the kids have no snowdays which I am okay with. If I ever wanted to go mountain climbing, I'd have to watch for huge avalanches. I'd really like to live hear.

I picked up my iphone 527 and called my boss.

"Hello?"

"Hi. It's Haylee Horan. I've made my decison."

"Great! Where?"

"Denver, Colorado."

"Come on down and we can fill out the papers."

Hawaii	Louisiana	Colorado
<p>Pros:</p> <ul style="list-style-type: none"> • living by ocean and being able to surf, swim • warm weather all year round • volcano in backyard • dry & rainy seasons 	<p>Pros:</p> <ul style="list-style-type: none"> • amazing food • large Mardi Gras • living by a large body of water to fish and take a boat ride 	<p>Pros:</p> <ul style="list-style-type: none"> • fresh air and beautiful scenery • snow • clean air with little pollution • mountains
<p>Cons:</p> <ul style="list-style-type: none"> • can cut foot on sharp lava rocks • no snow or "sweater weather" • active volcano • tsunamis • no family 	<p>Cons:</p> <ul style="list-style-type: none"> • alligators • flooding • hurricanes • storm threats • no family 	<p>Cons:</p> <ul style="list-style-type: none"> • bears • too much snow • no snow days • take snowmobile to work • snowstorms / blizzards • avalanches