

Natural Disasters

5E Lesson

The 5E model is a scientifically proven method to improve student engagement and learning in your classroom

- ✓ Engagement
- ✓ Exploration
- ✓ Explanation
- ✓ Elaborate
- ✓ Evaluate



Complete Teacher Instructions

Natural Disasters 5E Lesson

Grades 7-12	Natural Disasters	Ongoing Lesson
Lesson Objective: Students will learn about: • Weather vs Climate • Plate Tectonics • Natural Disasters • Meteorological Natural Disasters • Climatological Natural Disasters • Geological/Geophysical Natural Disasters • Hydrological Natural Disasters • Extraterrestrial Natural Disasters • Biological Natural Disasters		
Possible Student Misconceptions: • Lightning never strikes the same place twice • Hail only falls in the winter • All blizzards have snow • All wildfires are bad OR all wildfires are natural • Volcanoes are randomly located across the Earth's surface • Volcanoes are only found on land • Volcanoes are found only in hot climates • All volcanoes erupt violently • There is such a thing as "earthquake weather" • Earthquakes happen randomly around the world • You can trigger an avalanche by yelling too loudly • Tsunamis are tidal waves • Tsunamis are only caused by earthquakes • Typhoons, hurricanes, and cyclones are different things • Floods don't happen during droughts • Solar flares can destroy the Earth • Epidemics, pandemics, and outbreaks are the same thing		
Materials: • 1 device (smartphone, Chromebook, laptop, tablet, or computer) per 3 students • A means of projecting a PowerPoint presentation • Internet access • General classroom objects		
Teacher Notes: ➢ All videos can be accessed directly from the PowerPoint. To retrieve them, click on the video icon while in slideshow mode and it will automatically open for you. If it doesn't, right-click on the image and click Edit Hyperlink or something similar. ➢ I've created a video walkthrough if needed. It can be accessed here - https://youtu.be/oCIKIP9SaDQ ➢ I don't believe in long lessons. If you feel your students are losing their focus, stop the PowerPoint and give them a 5-minute break. If you'd like to see more of my video collection here - http://www.teachwithfergy.com/sc are tons of brain-break videos to choose from all grouped by category.		

Natural Disasters – 5E Lesson

Engagement Phase Your students will watch the video 'What Causes Thunder' and complete the questions found in the file – Engagement – What Causes Thunder Video . Teacher Notes: - The video is about one and a half minutes long - You may need to show the video more than once or pause when an answer is given to one of the questions.	Duration: 10 min Teacher Role: Engage and activate prior knowledge ☐ Co-expl ☐ Cr ☐ Asl ☐ Un ☐ of f
Exploration Phase Exploration – Lab Station Activity • In groups of 2-3, have your students complete Exploration – Lab Station Activity. Once they're done, they will submit their passport to you. Teacher Notes: • The complete instructions for my Lab Station activity can be found in the START HERE – Instructions file.	Duration: 15 min Teacher Role: Explore and learn ☐ Stu ☐ Stu ☐ cre ☐ Stu ☐ ob ☐ res ☐ con
Explanation Phase PowerPoint Lessons • The lesson is found in the folder – Explanation – Natural Disasters Lesson • This lesson is designed to be completed over two days • There are multiple embedded videos and plenty of opportunity to engage, interact and check for your students' understanding throughout the lesson • The lesson covers the following topics: ➢ Weather vs Climate ➢ Natural Disasters ➢ Meteorological ➢ Climatological ➢ Geological/Geophysical ➢ Hydrological ➢ Extraterrestrial ➢ Biological Teacher Notes: • All videos can be accessed directly from the PowerPoint. To retrieve them, click on the video icon while in slideshow mode and it will automatically open for you. If they don't open, right-click the image and select Edit Hyperlink or something similar. • I've created a video walkthrough if needed. It can be accessed	Duration: 30 min Teacher Role: Explain and understand ☐ Stu ☐ uni ☐ con ☐ Ob ☐ ex ☐ dis ☐ Stu ☐ vor ☐ Stu ☐ cor ☐ pre ☐ ex

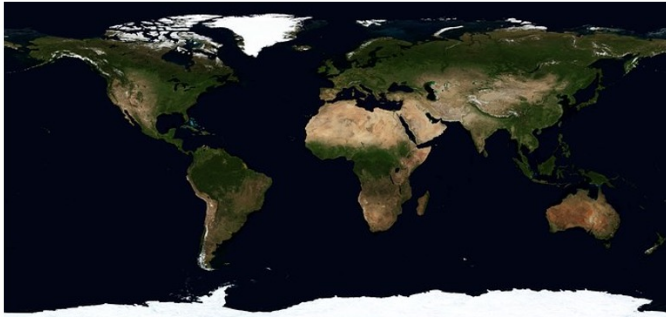
here - https://youtu.be/oCIKIP9SaDQ • I have also enclosed a .PDF version of both the teacher and student versions.	
Elaborate Phase Elaborate – Reading Your students will complete – Elaborate – Reading . This reading will require your students to move beyond what was covered directly in the lesson and allow them to further develop their understanding. Teacher Notes: - Students will work individually or in small groups - This reading contains 15 comprehension questions and 3 extension questions. It is fully editable, so I encourage you to remove any question(s) in order to meet the needs of your students as well as your time frame.	Duration: 1 hour Teacher Role – Facilitate learning and keep students focused Goal ☐ Students use their newly obtained knowledge to propose solutions and extend their learning to new situations
Evaluate Phase Quiz Have your students complete - Evaluate – Natural Disasters Quiz Teacher Notes: ➢ It's sometimes best to have the students peer evaluate ➢ Placing students in small groups and having them exchange papers to mark will accomplish two things 1) Provide immediate feedback on the questions they just completed 2) Significantly reduce your marking time ➢ Peer evaluation is not needed, only suggested when appropriate	Duration: 30 min Teacher Role – Distribute and collect evaluation Goal ☐ Students are given the opportunity to demonstrate their understanding and evaluate their own progress

Each phase is clearly described

A Complete Lesson

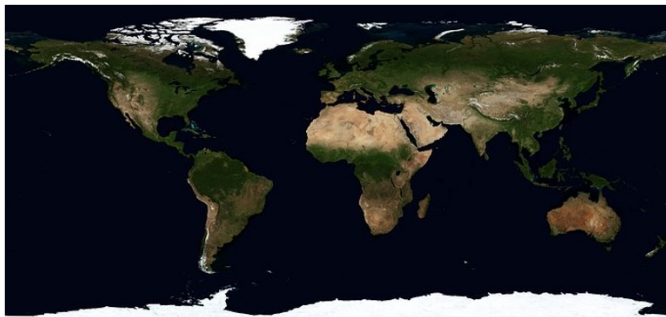
Weather vs Climate

- Climate
 - Long-term weather
 - Averages and extremes



Weather vs Climate

- Climate
 - _____
 - Averages and extremes



← Make sure your students are on track

Student copies with blanks
Videos embedded right into
your slideshow

Natural Disasters



- Events caused by natural processes
- Severe property or environmental damage
- Loss of life



Interactive and Engaging Activities

Natural Disasters

Scientific Reading Comprehension Article and Extension Activity



Natural Disasters

What is a natural disaster?
What do hurricanes, wildfires, blizzards, and volcanoes have in common? They can all be classified as **natural disasters**. Natural disasters are those events caused by natural processes that result in severe property or environmental damage and loss of life. By some definitions, natural disasters are only those that affect human populations. A tsunami hitting an uninhabited island wouldn't qualify. However, others consider the adverse impact that precipitated the K-T mass extinction to have been a natural disaster, and there were no humans around at that time. In either case, there are five broad categories of natural disasters: meteorological, climatological, geological/geophysical, hydrological, and astronomical.



Illustration of a natural disaster, showing a bright light source, possibly the sun or a star, with a lens flare effect.

Kind of natural disaster
Meteorological natural disasters are weather-related. Weather is the condition of the atmosphere, or what is happening in the atmosphere at a certain point in time. The **atmosphere** is the layer of gases (and tiny particles floating in those gases) surrounding and protecting our planet. Such disasters include thunderstorms, tornadoes, hurricanes, blizzards, and hailstorms.



Illustration of a natural disaster, showing a volcanic eruption with smoke and ash rising from a crater.

Geological or geophysical natural disasters are those caused by the Earth itself and include earthquakes, volcanic eruptions, and tsunamis.

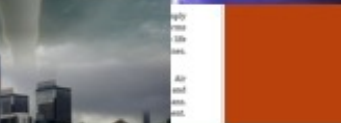
Hydrological natural disasters are related to water. They include hurricanes, floods, and droughts.

Astronomical natural disasters are those caused by celestial bodies. They include comets, meteoroids, and asteroids.



Illustration of a natural disaster, showing a city skyline at night with a massive, dark, swirling storm cloud formation over it, representing a severe weather event.

Thunderstorms form in cumulonimbus clouds. Large water droplets condense in the middle and bottom of the cloud and ice crystals form near the top. As



Improve your students' **Literacy** and **Analysis Skills**, use as an **Emergency Substitute Plan**, or create **Applicability** in your classroom

Natural Disasters Lab Station Activity

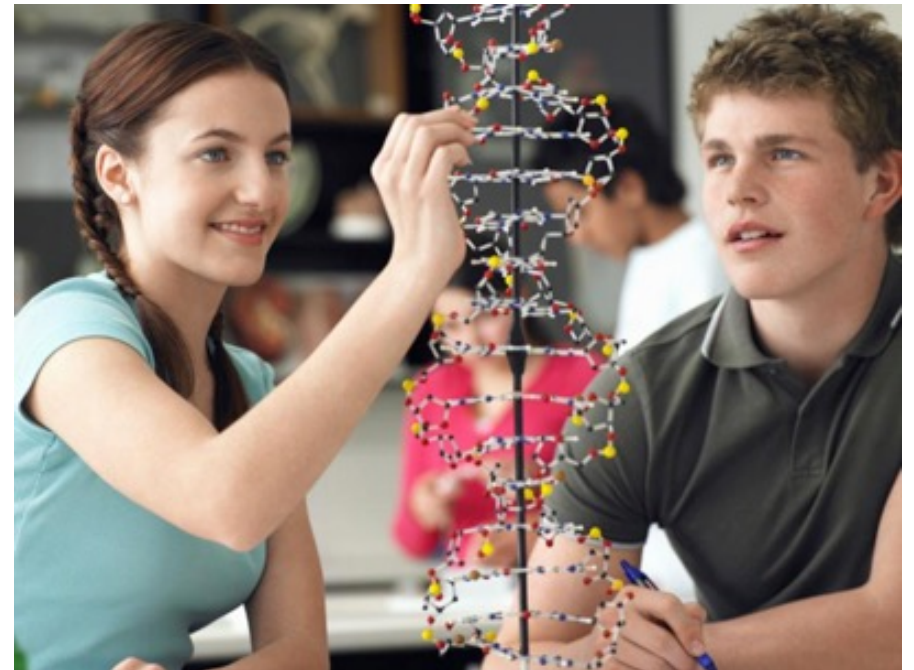


7 Lab Station Activities to get your kids out of their seats and engaged in their learning

Get away from tired practices and unengaged students



Provide a Scientifically-Proven means of instruction



Incorporate Technology and Increase Collaboration

