**Risk Education: Module 9 – Earthquake Risk**

*Objectives*

* Describe how earthquakes occur and how they are measured
* Provide examples of how earthquakes affect the environment and ways engineering can help minimize damage
* Recall best practices to use to help your community prepare for an earthquake

*Resources*

* What to do during an earthquake – ShakeOut : <https://youtu.be/GSDmqLQmMN0>
* When The Earth Shakes - FEMA: <https://youtu.be/MKILThtPxQs>
* Brief Reading Material – “Rising earthquake-insurance costs put millions of Missourians, economy at risk”: <https://www.thecentersquare.com/missouri/rising-earthquake-insurance-costs-put-millions-of-missourians-economy-at-risk/article_2b08f1d4-e99d-11eb-b028-b355b0bfef93.html>
* Moderate Reading Material - “Forget Doorframes: Expert Advice on Earthquake Survival Strategies” : <https://www.scientificamerican.com/article/forget-doorframes-expert-advice-on-earthquake-survival-strategies/>
* Advanced Reading Material – “The Really Big One”: <https://www.newyorker.com/magazine/2015/07/20/the-really-big-one>
* Interactive Earthquake Preparedness Game (Created by Lewis & Clark College): [Cascadia 9 Game](https://www.cascadia9game.org/)

*Discussion Topics and Activities*

* Ask students to find notable earthquake events in history and write a summary about it
* Discuss why isolating a building from its foundation reduces damages on the structure (Physics)

*Potential Courses Where the Module could be Utilized*

* Earth and Space Science (ESS.ESS2)

*Applicable Tennessee Education Standards*

* Social Studies
  + SSP.04: Construct and communicate arguments citing supporting evidence
* Science
  + EES2: Earth’s Systems
  + EES3: Earth and Human Activity
  + ETS2B: Influence of Engineering, Technology, and Science on Society and the Environment
  + Cross-cutting concepts
    - Cause & Effect
    - Stability and Change