Content Area: Natural Disasters

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| **Unit #1** | **Performance Indicators/Standards** | **Objectives** | **Learning Targets** | **Text/Supplemental Resources** | **Suggested Activities/Assessments** |
| Introduction to Natural Hazards and Disasters*Scientific method and line graphs**Why Studying Natural Hazards is Important**Hazard, Disaster or Catastrophe**Death Damage Caused by Natural Disasters* *Geologic Cycle**Tectonic Cycle**Human Population Growth* | Standard 1: Students will use mathematical analysis, scientific inquiry, and engineering design, as appropriate, to pose questions, seek answers, and develop solutions. Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.  | Understand and explain the steps of the scientific methodComplete and interpret a line graphKnow the difference between a disaster, hazard and catastropheRecognize that natural hazards that cause disasters, are generally high-energy events caused by natural earth processesAnalyze the statistics of death and damage caused by natural disastersExplain the steps of the geologic, tectonic, rock and water cyclesRecognize that increasing human population and poor land use practices compound the effects of natural hazards that can turn into disasters | *I will list and define the steps of the scientific method & will differentiate between independent and dependent variables.* *I will make an appropriate scale, complete and interpret a line graph**I will differentiate between the different types of ND’s and know the states of the U.S.**I can explain what a natural disaster is and list examples.**Distinguish the difference between a disaster, hazard and catastrophe**Analyze the statistics of death and damage caused by natural disasters**I can identify the layers of the earth and explain the forces inside them**I can describe the theory of plate tectonics and identify their locations on earth**I can describe the effects of human population growth on the earth and how it relates to natural disasters* | *Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes* | Scientific method labNatural disaster quiz #1Nearpod- Plate tectonics |

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| **Unit #2** | **Performance Indicators/Standards** | **Objectives** | **Learning Targets** | **Text/Supplemental Resources** | **Suggested Activities/Assessments** |
| Earthquakes*Plate tectonics and physical hazards* *Earths Structure**Plate movement**Hazards and plate boundaries**Earthquakes and their causes**Types of Faults**Types of waves/Seismographs**Intensity and Magnitude**Predictions/Forecasts**Preparedness**Links to other disasters**Deadliest earthquakes/Damage* | Standard 1: Students will use mathematical analysis, scientific inquiry, and engineering design, as appropriate, to pose questions, seek answers, and develop solutions. Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science. Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions. | Investigate plate tectonics, boundary movement and the earths structure and how it relates to earthquakesExplain earthquakes and their causesUnderstand how scientists measure and compare earthquakes using a seismographAnalyze the different types of faults and wavesUnderstand the intensity and magnitude of an earthquakeExplain how scientists can predict an earthquakeKnow which global regions are most at risk for earthquakes and why they are at riskExplore the effects of earthquakesDiscuss methods of earthquake preparednessIdentify how earthquakes are linked to other natural disasters such as tsunamis, landslides and wildfiresResearch the deadliest earthquakes and the damage they caused | *I can identify the cause of an earthquake**I can interpret the latitude and longitude and identify locations on a map using these coordinates.**I can differentiate between P and S waves on a seismogram and understand the intensity and magnitude of an earthquake**I can explain earthquakes and their causes**I can understand how scientists measure and compare earthquakes using a seismograph**I can explain how scientists try to predict an earthquake**I know which global regions are most at risk for earthquakes**I can explore the effects of earthquakes**I can research the deadliest earthquakes and the damage they cause**I can observe the science of an earthquakes and identify how earthquakes are linked to other natural disasters* | *Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes* | Identifying latitude and longitudeEarthquake labEarthquake webquestNOVA EarthquakeNearpod – Seismic waves |

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| **Unit #3** | **Performance Indicators/Standards** | **Objectives** | **Learning Targets** | **Text/Supplemental Resources** | **Suggested Activities/Assessments** |
| Tsunamis*Causes/Generation**Movement**Warnings**Deadliest Tsunamis/Damage* | Standard 1: Students will use mathematical analysis, scientific inquiry, and engineering design, as appropriate, to pose questions, seek answers, and develop solutions. Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science. Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions. | Understand the process of tsunami formation, movement and developmentIdentify the methods of detection and warningsExplain the effects of tsunamis and the hazards they pose to coastal regions Know what geographic regions are at risk for tsunamis Research the deadliest tsunamis and the damage they caused | *I can examine a tsunami and its deadly effects**I can explain the cause/generation of a tsunami**I can explain the effects of tsunamis and the hazards they post to coastal regions**I can identify tsunami causes and method of prediction**I can research how far the damage of the Japan tsunami reached other countries**I can research the deadliest tsunamis and the damage they caused**I can Identify the methods of detection and warnings of a tsunami**I can research the top 5 deadliest tsunamis* | *Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes* | Tsunami webquestTsunami articleJapan’s killer quakeAmerican Tsunami – Are we nextTsunami/Earthquake test |

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| **Unit #4** | **Performance Indicators/Standards** | **Objectives** | **Learning Targets** | **Text/Supplemental Resources** | **Suggested Activities/Assessments** |
| Volcanoes*Magma**Types**Origins**Eruptions**Warnings/Predictions* *Deadliest Volcanoes/Damage*  | Standard 1: Students will use mathematical analysis, scientific inquiry, and engineering design, as appropriate, to pose questions, seek answers, and develop solutions. Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science. Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions. | Explain the process of formation and development of volcanoes Describe what magma and lava is and what it is composed ofList and analyze the major types of volcanoes Examine the process of eruptions and the damage they causeIdentify the methods of detection and warningsKnow what geographic regions are at risk from volcanoesResearch the deadliest volcanoes and the damage they caused | *I can identify the cause of a volcano**I can explain volcanoes and their causes**I can explain the process of eruptions and the damage they cause**I can describe what magma and lava is and what it is composed of**I can explain how scientists try to predict a volcano**I know which global regions are most at risk for volcanoes**I can explore the effects of volcanoes**I can research the deadliest volcanoes and the damage they cause**I can observe the science of volcanoes and identify how they are linked to other natural disasters* | *Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes* | Volcano webquestVolcano articleNOVA – Volcano under the cityVolcano neapod |

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| **Unit #5** | **Performance Indicators/Standards** | **Objectives** | **Learning Targets** | **Text/Supplemental Resources** | **Suggested Activities/Assessments** |
| Landslides*Causes**Effects/Damage**Locations* | Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.  | Describe the source of inception of a landslideInvestigate the effects and damage of a landslideExplore the different geographic locations of landslidesResearch the deadliest landslides and the damage they caused | *I can identify the cause of a landslide**I can explain landslides and their causes**I can explain the process of landslides and the damage they cause**I can explain how scientists try to predict a landslide**I know which global regions are most at risk for landslides**I can explore the effects of landslides**I can research the deadliest landslides and the damage they cause**I can observe the science of landslides and identify how they are linked to other natural disasters* | *Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes* | Landslide webquestLandslide articleLandslide neapod |

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| **Unit #6**  | **Performance Indicators/Standards** | **Objectives** | **Learning Targets** | **Text/Supplemental Resources** | **Suggested Activities/Assessments** |
| Sinkholes*Types**Causes**Effects/Damage* | Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.  | Identify the different types of sinkholesExplain what can cause a sinkholeResearch the deadliest sinkholes and the damage they caused | *I can identify the cause of a sinkhole**I can explain the process of sinkholes and the damage they cause**I can explain how scientists try to predict a sinkhole**I know which global regions are most at risk for sinkholes**I can explore the effects of sinkholes**I can research the deadliest sinkholes and the damage they cause**I can observe the science of sinkholes and identify how they are linked to other natural disasters* | *Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes* | Sinkhole webquestSinkhole article |

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| **Unit #7** | **Performance Indicators/Standards** | **Objectives for all topics in this unit** | **Learning Targets for all topics in this unit** | **Text/Supplemental Resources** | **Suggested Activities/Assessments** |
| Weather*Thunderstorms**Blizzards**Avalanches**Tornadoes**Hurricanes**Cyclones**Typhoons* | Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science. Standard 7: Students will apply the knowledge and thinking skills of mathematics, science, and technology to address real-life problems and make informed decisions. | Explain and define the causes, effects, damage, prediction, locations, prevention and differentiate between them allResearch the deadliest and the damage they caused | *I can identify the causes**I can understand how scientists measure and predict**I know which global regions are most at risk**I can explore the effects* *I can research the deadliest and the damage they cause**I can observe the science and identify how they are linked to other natural disasters* | *Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes* | WebquestsArticlesNearpodsStorm chasersNational Geographic StormsNOVA Deadliest TornadoesNOVA Hurricane Katrina |

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| **Unit #8** | **Performance Indicators/Standards** | **Objectives** | **Learning Targets** | **Text/Supplemental Resources** | **Suggested Activities/Assessments** |
| Climate and climate changeCauses/effects Global warmingHeat wavesHuman impactSolutions | Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.  | Understand the difference between climate and weather and how their variability is related to natural disastersRecognize the cases and effects of climate changeDefine global warming and explain the long-term effectsDescribe a heat wave and its effects on plants, animals and humansSummarize the impact that humans have on climate change | *I can understand the difference between climate and weather and how their variability is related to natural disasters**I can recognize the cases and effects of climate change**I can define global warming and explain the long-term effects**I can describe a heat wave and its effects on plants, animals and humans**I can summarize the impact that humans have on climate change* | *Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes* | WebquestsArticlesNearpods |

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| **Unit #9** | **Performance Indicators/Standards** | **Objectives** | **Learning Targets** | **Text/Supplemental Resources** | **Suggested Activities/Assessments** |
| Flooding*Causes/effects**Predictions* *Prevention* | Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.  | Understand and explain the causes, effects, prediction and preventions of floodingResearch the deadliest and the damage they caused | *I can understand and explain the causes, effects, prediction and preventions of flooding**I can research the deadliest and the damage they caused* | *Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes* | WebquestsArticlesNearpods |

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| **Unit #10** | **Performance Indicators/Standards** | **Objectives** | **Learning Targets** | **Text/Supplemental Resources** | **Suggested Activities/Assessments** |
| Wildfires*Causes/effects**Predictions**Prevention* | Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.  | Understand and explain the causes, effects, prediction and preventions of wildfiresResearch the deadliest and the damage they caused | I can understand and explain the causes, effects, prediction and preventions of wildfiresI can research the deadliest and the damage they caused | *Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes* | WebquestsArticlesNearpods |

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| **Unit #11** | **Performance Indicators/Standards** | **Objectives for all topics** | **Learning Targets for all topics** | **Text/Supplemental Resources** | **Suggested Activities/Assessments** |
| Astronomical Disasters*Asteroids**Comets**Meteors* | Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.  | Explain and define the causes, effects, damage, prediction, locations, prevention and differentiate between them allResearch the deadliest and the damage they caused | *I can explain and define the causes, effects, damage, prediction, locations, prevention and differentiate between them all**I can research the deadliest and the damage they caused* | *Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes* | WebquestsArticlesNearpods |

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| **Unit #12** | **Performance Indicators/Standards** | **Objectives** | **Learning Targets** | **Text/Supplemental Resources** | **Suggested Activities/Assessments** |
| Mass Extinction*Causes**Extinct species* | Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.  | Understand the possible causes of mass extinctionResearch extinct species and explain how their absence has impacted the earth | I can understand the possible causes of mass extinctionI can research extinct species and explain how their absence has impacted the earth | *Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes* | WebquestsArticlesNearpods |