THE STANDARD

Forecasting Natural Hazards

Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.

DCI — DISCIPLINARY CORE IDEA

ESS3.B · Natural Hazards

> *Mapping the history of natural hazards in a region, combined with an understanding of related geologic forces can help forecast the locations and likelihoods of future events.*

Natural hazards leave fingerprints. Earthquakes cluster along plate boundaries. Hurricanes spin up over warm ocean water in seasonal windows. Volcanoes give off gas and small quakes before they erupt. When you map where hazards have happened and understand the geologic or atmospheric forces driving them, you can forecast where and when they're likely to happen again. Forecasting isn't fortune-telling. **It's pattern reading.**

SEP — SCIENCE & ENGINEERING PRACTICE

Analyzing and Interpreting Data

> *Analyze and interpret data to determine similarities and differences in findings.*

Students aren't memorizing hazard facts. They're pulling data (maps, magnitudes, dates, tracks) and looking for similarities and differences. Where do earthquakes cluster? Which months do hurricanes hit? What signals showed up before Mt. St. Helens blew? The data is messy on purpose. **Finding the pattern is the science.**

CCC — CROSSCUTTING CONCEPT

Patterns

> *Graphs, charts, and images can be used to identify patterns in data.*

Patterns are the whole game here. A single earthquake is a data point. A map of a thousand earthquakes is a story about plate boundaries. **The CCC pushes students to stop seeing hazards as random and start seeing them as patterned, repeatable, and forecast-able to a degree.**