THE STANDARD

Earth's Resource Distribution

Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.

DCI
DISCIPLINARY CORE IDEA

ESS3.A · Natural Resources

> *Humans depend on Earth's land, ocean, atmosphere, and biosphere for many different resources. Minerals, fresh water, and biosphere resources are limited, and many are not renewable or replaceable over human lifetimes. These resources are distributed unevenly around the planet as a result of past geologic processes.*

Earth's resources aren't sprinkled evenly. Oil, copper, iron, fresh groundwater, fertile soil. They concentrate in specific places because of specific geologic stories. **Where you find a resource is a clue about what was happening at that spot millions, sometimes billions, of years ago.**

SEP
SCIENCE & ENGINEERING PRACTICE

Constructing Explanations and Designing Solutions

> *Construct a scientific explanation based on valid and reliable evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.*

Students aren't memorizing where the oil fields are. They're constructing an explanation: here's the evidence (a resource map, a tectonic map, a rock layer description), here's the geologic process that fits, here's the reasoning that connects them. **Evidence in, explanation out.**

CCC
CROSSCUTTING CONCEPT

Cause and Effect

> *Cause and effect relationships may be used to predict phenomena in natural or designed systems.*

Every resource concentration has a cause behind it. Ancient swamp here, coal seam now. Subduction zone here, copper deposit now. **Students learn to read a map the way a detective reads a scene: this effect, what caused it?**