

EarthComm Earth's Natural Resources: Mineral Resources and Your Community Storylines

Below are storylines that were designed by Cheryl Mosier, an Earth Science Teacher at Columbine High School in Littleton, Colorado.

An additional project is done that shows students the following:

- where Colorado resources are found
- how Colorado resources are used
- graphing information

Big Idea:

- The dynamic geosphere includes a rocky exterior upon which ecosystems and human communities developed and a partially molten interior with convection circulation that generates the magnetosphere and drives plate tectonics. It contains resources that sustain life, causes natural hazards that may threaten life, and affects all of Earth's other geospheres.
- Earth resources include the nonrenewable and renewable supplies of energy, and mineral and water resources. Individuals and communities depend upon these resources in order to maintain quality for life and economic prosperity.
- In order to sustain the presence and quality of human life, humans and communities must understand their dependency on Earth resources and environments, realize how they influence Earth systems, appreciate Earth's carrying capacity, manage and conserve nonrenewable resources and environments, develop alternate sources of energy and materials needed for human sustenance, and invent new technologies.

	Activity 1 – Materials Used for Beverage Containers	Activity 2 – What are Minerals?	Activity 3 – Where Are Mineral Resources Found?	Activity 4 – How are Minerals Found?	Activity 5 – What are the Costs and Benefits of Mining Minerals?	Activity 6 – How are Minerals Turned Into Usable Materials?
Key Evidence Learned	- types of beverage containers we use	- mineral - classifying and naming minerals	- where are mineral resources in the US and Colorado - how different minerals are formed and what their uses are - uses of Colorado's resources	- how geologists find minerals - necessity and benefits of exploratory surveys	- demand and market value, costs of labor, refining, transportation and environmental reclamation - benefits and drawbacks to exploration and mining - economic importance of mining in Colorado	- separate a mineral from a rock - separate an element from a mineral - techniques for mineral processing and their resulting problems
Connection to:	- containers are made of what?	- crystal structure				

Big Idea	<ul style="list-style-type: none"> - dependence on resources - quality of life - management and conservation 	<ul style="list-style-type: none"> - types of resources - dependence on resources 	<ul style="list-style-type: none"> - uses of different minerals - formation of minerals 	<ul style="list-style-type: none"> - management of resources - exploration for new resources - economic prosperity 	<ul style="list-style-type: none"> - costs and benefits of mining 	<ul style="list-style-type: none"> - new technologies - environmental concerns
Real Life and Chapter Challenge	<ul style="list-style-type: none"> - why do we use the materials for beverages that we do? 	<ul style="list-style-type: none"> - understanding of minerals and how they relate to rocks - types of materials available for containers 	<ul style="list-style-type: none"> - where are minerals in CO? - exploration of minerals 	<ul style="list-style-type: none"> - how do geologists find the minerals? 	<ul style="list-style-type: none"> - how are minerals mined? - mining techniques - safety/costs/benefits 	<ul style="list-style-type: none"> - reclamation - recycling - smelting
Geosphere	<ul style="list-style-type: none"> - minerals used for beverage containers 	<ul style="list-style-type: none"> - how minerals are formed - what is a mineral 	<ul style="list-style-type: none"> - where minerals are in the Earth 	<ul style="list-style-type: none"> - geophysical techniques 	<ul style="list-style-type: none"> - mining is done how? 	<ul style="list-style-type: none"> - what happens after mining?
Hydrosphere	<ul style="list-style-type: none"> - how is water stored with different containers - how has this changed over time 	<ul style="list-style-type: none"> - types of minerals deposited by water sources 	<ul style="list-style-type: none"> - minerals in the ocean - can we mine minerals in the ocean 	<ul style="list-style-type: none"> - how water impacts geophysical techniques 	<ul style="list-style-type: none"> - how water can influence a mine - flooding hazards - how water is used in mining 	<ul style="list-style-type: none"> - acid rain problems - pollution of water after mining
Biosphere	<ul style="list-style-type: none"> - how humans have changed containers over time to meet different needs 	<ul style="list-style-type: none"> - how humans use minerals - how animals use minerals to survive (salt, etc.) 	<ul style="list-style-type: none"> - how new deposits are found and that impact on humans and the ecosystem 	<ul style="list-style-type: none"> - ecosystem impacts of possible mining 	<ul style="list-style-type: none"> - human costs and benefits - ecosystem costs and benefits 	<ul style="list-style-type: none"> - pollution problems
State Stand.	5a, 5b		4.1.e	4.1.e, 5a, 5b	4.1.e, 5a, 5b	4.1.e, 5a, 5b
Jeffco Stand.		4.1.a	4.1.e	4.1.e	4.1.3	4.1.e
CSAP Frame	4.1.5 a-d	4.1.5 a-d	4.1.5 a-d	4.1.5 a-d	4.1.5 a-d	4.1.5 a-d
Jeffco PE	4	4	4	4	4	4