



Activity – Concern – Solution

Mining can impact the environment. Examples of activities include clearing vegetation during mine construction; creating waste rock and dust through blasting; and using energy and water in mineral extraction, milling, and processing. Government regulations and mitigation measures, innovation, and technology serve to prevent, reduce, or control these impacts.

Activity Purpose

Learn about impacts of mining activities on the environment. Match mining activities with environmental concerns and with innovative solutions used to minimize impacts on the environment.

Supplies

- Print and cut out a set of Activity – Concern – Solution cards (8 sets of 3, total of 24).

Instructions

1. Arrange all the red Activity cards face up on a table.
2. Shuffle all the blue Concern and yellow Solution cards.
3. Match the corresponding Concern and Solution cards with each Activity card.
4. When you have finished matching, you should have 8 sets of three.

Discussion

What were your impressions of the mining activities and the associated concerns and solutions that are represented?

Activity

Mining needs water that is usually obtained from surface and groundwater sources.

Activity

Closed mines contain waste rock and other remnants from mining.

Activity

Most mining activities use water.

Activity

Mining requires large amounts of energy from electricity, gasoline and diesel fuel.

Activity

Mining produces waste rock.

Activity

Mining clears vegetation and changes natural habitats.

Activity

Mining can accidentally spill chemicals hazardous to the environment.

Activity

Mining activities can create dust and wind can transport the dust.

Concern

Mining may create water shortages for animals, plants and people in the region. Water costs may rise for other users.

Concern

Mines may return contaminated water to the environment.

Concern

Changing natural habitats may cause harm to wildlife in the area.

Concern

Safety and environmental impacts from mining are a long term concern.

Concern

Air quality can be affected around the mine.

Concern

Generating electricity may produce greenhouse gases. Fuel trucks may pollute the environment.

Concern

Mine waste rock can react with air and water to create environmental contaminants.

Concern

Mines could cause significant hazardous environmental spills.

Solution

Mines can reduce water use, and reuse and recycle water. Mines can use alternative sources such as seawater or municipal waste water.

Solution

Mines can treat and monitor waste water and make sure it is returned to the environment clean.

Solution

Mines can plan to minimize the area cleared, and replace plants as soon as possible.

Solution

Monitor and manage the risks at closed mine sites on a long term basis.

Solution

Mines can plan to improve their energy efficiency. Mines can consider alternative energy sources.

Solution

Mines can monitor air quality, and adjust mining practices to reduce dust.

Solution

Mines plan to minimize the risk of a spill and any effects on the environment.

Solution

Mines have storage areas to separate waste rock. Mines can use waste rock in reclamation.