Impacts of Mining

As more accessible ores are mined to depletion,	Minning operations must access lower grade ore
Accessing lower grade ore	requires increased resources, increased waste and pollution
Mineral Resource	naturally occurring material from earth's crust extracted and processed into useful products + materials at affordable cost
Ore	accumulation of minerals from economically valuable materials can be extracted
Metals	Conduct electricity + heat energy (Cu, Ni, Al, Au)
Reserve	Known quantity of resource

Global Energy Consumption

Global energy uses per capita	has been steadily increasing and will continue to do so.
Energy	Joules
What affects the rate at which energy is used?	Availibility, affordability. environmental impacts.
The US uses	5x more energy per capita than any other country.

Mining Techniques

Strip	Removes strips of soil and rock to expose ore (Coal + sand) Remove material, extract resource, return waste
Open-pit	Pit with ore extended horizontally and vertically beneath surface (Copper, Mica)
Mountaintop	Remove entire mountaintop with explosives, remove tailings to lower ground, often near water
Placer	Precious medals and stones in river (gold, diamonds)
Subsurface	Deep deposits removed through the use of tunnels

Industrializaton

As countries move from 3rd world to 1st world countries,	the energy needs increase

Mineral Use

Advantages	Income, revenue, employment
Disadvantages	energy use, land degration, water degration, land, water and air pollution

Mining Legislation

General Mining Act	Encouraged mineral exploration out west
Surface Mining control and Reclamation Act	Land must be minimally disturbed during coal mining and then must be reclaimed