



Beyond the Sources • Mining

Using the information you gather on the web site, answer the following questions about the unit.

1. Over the years, various kinds of technology improved mining. What kinds of technologies improved the digging process?

The use of drills, especially the diamond tipped drill, made it easier to dig deeper and faster. Steam shovels also made it easier to scoop up large amounts of material and move it around. Explosives also made a difference, as they allowed workers to loosen large amounts of rock and earth at one time.

What technology made transporting ore possible?

Iron ore could never have been shipped if it were not for the railroads. Steam engines were able to pull huge amounts of weight that animals simply couldn't pull.

What kinds of processes have changed very little?

Tools like shovels and picks have always been used in mining and probably always will be.

2. The mines of the Mesabi Range allowed dozens of towns like Hibbing to grow. How does having a mine nearby benefit a town like Hibbing?

Mines create jobs. Even though the work was dangerous, the mines gave the people who lived there money to build homes and buy things for themselves, which creates a need for places to spend money. This is how a town grows.

What problems might arise when a town's survival depends on a mine?

Because mines survive by gathering natural resources that won't regrow, towns on the Mesabi Iron Range will someday have to figure out how they will survive when there is no more ore to be mined.

What are some of the negative impacts mining has on the land?

Both underground and open pit mining require lots of land to be dug up and removed. This damages the beauty of the area, leaving behind large caved in areas and big, empty pits of dirt.

3. Though you've seen only a very small part of the complicated mining process, you should have an idea of how mining was done. What steps are taken to get iron ore out of the ground?

In an open pit mine, all that is required is loosening the ore and scooping it up using steam shovels. Underground mining requires digging a system of tunnels into the ore, shoveling it into underground ore cars, then hauling them to the surface.

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Once the ore has been removed from the ground, what is the best method for transporting ore over the land and why?

The best method for transporting ore over land is by train. This is because large amounts of ore can be loaded into a single ore car, and many cars can be pulled by a train. Without the railroads, transporting ore would be nearly impossible.

Once the ore had been carried away from the mines, where was it taken?

The iron ore was transported to the shores of the Great Lakes where it was loaded into ore carrying ships that would transport it east to cities where the ore would be turned into pure iron.

4. Two methods of mining were used at Hibbing: open-pit mining, and underground mining. What are some of the similarities between these two methods?

Both of them dealt with finding bodies of ore and digging them up. They both relied on digging and blasting techniques, and shipped what they had dug to the same place by rail.

If you suddenly had a need for more ore, which method would you use and how would you change it to make it faster?

Both methods could be sped up, but the simplest one to speed up was open pit mining. This could be done by just adding more steam shovels and getting the trains to run more often.

What are some of the dangers in underground mining that open-pit miners wouldn't have to fear as much?

Cave-ins were possible in both places, but were more likely in underground tunnels. Also the tunnels required vertical pits to be dug, which meant falling was a danger. Underground miners also had to deal with the darkness of the underground, which made accidents happen more easily.