

MINING IN MICHIGAN

Note to teachers: This supplement includes a discussion guide, lessons and Michigan Content Standards to use with the Michigan Time Traveler page. You may reproduce the pages in this supplement to use with students.

DISCUSSION GUIDE

(SOC 1.3. Analyze and Interpret the Past; SOC.1.1. Time and Chronology; ELA 3. Meaning and Communication in Context)

- **A Day in the Life of a Miner:**
 - What kinds of clothes did the miner wear?
 - What did you learn about the conditions underground that influenced his choice of clothing?
 - In later years mines had steam-powered man engines—a type of underground “escalator.” How did the 1860s miner get to his work station?
 - What did he eat for lunch? (A pasty [“pass-tee”] an individual meat, potato, rutabaga and onion pie that looks similar to a calzone.)
 - If the underground miner worked 10 hours a day, 6 days a week, how much did he earn an hour in 1868? What did the surface worker earn an hour?
- **A Day's Work:**
 - Describe some underground jobs.
 - How did the above-ground workers contribute to the mining activity?
- **Important Dates In Michigan's Early Mining History:**
 - What were some inventions and improvements that helped the mining industry advance. (Soo Locks, diamond drill, dynamite)
 - What states eventually passed Michigan in copper and iron production?

ACTIVITY ONE: Where Does Michigan's Mining History Fit in National History?

(SOC.1.1. Time and Chronology; SOC 1.3. Analyze and Interpret the Past; Arts 2. Visual Arts: Creating)

Trace the advancements of Michigan's early mining history by discussing the “Important Dates in Michigan's Early Mining History.” The 19th century was the period of Michigan's greatest production of iron and copper. It was also a time of great expansion for the United States. The goal of this activity is to appreciate the role of these state resources in the growth of the nation. Use the milestone inventions and incidents in U. S. history listed below or choose your own. Assign each event to a student or groups of students. Ask them to research the event, then report about how the state's iron and/or copper may have contributed to that aspect of the nation's growth.

1861	First transcontinental telegraph is put in operation.
1861-1865	Northern and southern states fight Civil War.
1869	The transcontinental railroad is completed when the “golden spike” is driven at Promontory, Utah.
1871	The great fire destroys Chicago; city begins to rebuild.
1876	Alexander Graham Bell invents the telephone; two years later the first commercial telephone exchange opens in New Haven, CT.
1879	Thomas Edison develops the first practical light bulb and a system for the distribution of electricity.
1895	Guglielmo Marconi invents the radio.
1896	Charles B. King builds and drives the first gasoline-powered car in Michigan.

ACTIVITY TWO: Upper Peninsula Map Activity

(SOC.I.3. Analyze and Interpret the Past; SOC.V.I. Information Processing)

DISCUSS: During the copper and iron booms of the 19th century, miners rushed to the Upper Peninsula. Many mining communities were larger than they are today. Have students find the cities that mining built on a current Michigan map. (Copper Range cities: Calumet, Champion, Copper Harbor, Gwinn, Hancock, Houghton, Ontonagon. Iron Range cities: Bessemer, Caspian, Iron Mountain, Iron River, Ironwood, Ishpeming, Marquette, Negaunee. Cities important to shipping: Escanaba, Sault Ste. Marie.)

DO: Provide each student with a copy of the outline map of the Upper Peninsula (page 3). Ask students to complete their maps by adding the cities and labeling each copper and iron range.

ACTIVITY THREE: Dangerous Jobs

(SOC.I.3. Analyze and Interpret the Past; SOC.II.4. Regions, Patterns and Processes)

DISCUSS: Mining is dangerous work. The student handout on page 4 lists accidents in one Michigan mine in 1891-92. Study and discuss the chart with your students. Ask students to put the accidents into categories. Chart them on the board. (Likely categories include: blasting, objects falling on miners, miners falling, miners injured by moving skips/cars.) What was the most frequent type of accident? (objects falling on miner) What safety steps might a miner or mine owner take to prevent each of the accidents on the chart? (wearing helmets, shoring up loose rock with timbers, being alert and careful around loose rock or moving equipment, proper explosive handling, others)

DO: With students, develop a list of occupations with obvious—and not-so-obvious—inherent dangers, especially those mentioned in recent newspaper or other media stories. Include road and building construction workers, law enforcement officers and prison guards, commercial fishers, professional sports athletes, fire fighters, sports mascots and amusement park characters, computer workers, fast food workers. Include jobs for both adults and teens. Ask students to choose an occupation and research its hazards, both from the ordinary job routine (e.g., hot grease in a restaurant) and from external elements (e.g., a robbery at a restaurant). Assign: write a report about the selected job, its dangers, and how (1) the worker, (2) the employer and (3) the general public (e.g., slowing down in a road construction zone) should try to prevent each of the dangers.

Assessment Rubric for “Dangerous Jobs”

4	3	2	1
Report addresses the topic and suggests 3 or more dangers inherent in the occupation. Each is described with ways a worker, employer and, where relevant, the general public can mitigate them. Report has well-developed ideas, good organization and logical sequencing. Grammar, spelling and punctuation are correct.	Report addresses the topic and suggests 1 or 2 dangers inherent in the occupation. The report includes ways to address the dangers mentioned, but from only one point of view (e.g., worker, not employer or public). The report shows organization, but ideas need more development. Few errors in grammar, spelling and/or punctuation.	Report addresses the topic but offers limited information about job dangers and only one or no way to address dangers. Organization is not clear. Several errors in grammar spelling and/or punctuation.	Report discusses a job but not its dangers (or addresses a danger, but gives no background for the job to which it relates). Report lacks organization. Errors in grammar, spelling and punctuation affect meaning and readability.

INTERNET RESOURCES

- Take the minitour of the Michigan Historical Museum’s “Mining in Michigan” exhibit: <http://www.sos.state.mi.us/history/museum/explore/museums/hismus/prehist/mining/mining.html>.
- Find mining links and lesson ideas in Teachers’ Stuff: <http://www.sos.state.mi.us/history/museum/techstuf/>.
- Read about mining engineering history at Michigan Tech and see mining range maps and photos: <http://www.mg.mtu.edu/mining/oldpix.htm>.

Michigan's Upper Peninsula



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LIST OF THE FATAL ACCIDENTS AT THE MINES OF HOUGHTON COUNTY
from September 30, 1891 to September 30, 1892,
giving date, person's name, place employed, manner of accident and nationality.

DATE	NAME	MINE	MANNER OF ACCIDENT	OCCUPATION	NATIONALITY
1891					
Oct. 13	Thomas W. Waters	Tamarack Mine	Fall of vein rock	timberman	English
Nov. 13	Stephen Sterbenz	Hecla Mine	Riding on skip	trammer	Austrian
Nov. 30	John Lockso	Tamarack Mine	Blasted	miner	Finlander
Nov. 30	Jacob Wamzen	Hecla Mine	Caught by ascending skip	trammer	Polander
Dec. 9	Olaf Hendrickson	Tamarack Mine	Explosion of dynamite	miner	Finlander
Dec. 9	Mattheas Flenk	Tamarack Mine	Explosion of dynamite	miner	Finlander
1892					
Jan. 2	James Taylor	Centennial Mine	Fell down stairs in rockhouse	mining captain	English
Jan. 26	Wm. Goeshoe	Calumet Mine	Struck by rock from dump car	laborer	German
Feb. 9	Michael Sheehan	Atlantic Mine	Struck by car	lander	Irish
Feb. 29	John Kurtitch	Tamarack Mine	Struck by timber falling down shaft	miner	Austrian
Mar. 12	John Matthews	Hecla Mine	Fell down mill	timberman	English
Mar. 26	Joseph Julio	Hecla Mine	Fall of vein rock	laborer	Italian
Apr. 11	Issac K. Mackey	Peninsular Mine	Explosion of dynamite and box of caps	miner	Finlander
June 25	Erick Saary	Tamarack Mine	Pryed rock down on himself	trammer	Finlander
July 11	John Hanley	Franklin Mine	Fall of hanging-wall rock	miner	Irish
July 13	Thomas Alatala	Atlantic Mine	Struck by rock from blast	trammer	Finlander
July 25	Richard Thomas	Tamarack Mine	Fall of vein rock	miner	English
Aug. 12	Matt Garinen	Atlantic Mine	Fall of earth in exploring pit	laborer	Finlander
Sept. 5	Michael Sullivan	Huron Mine	Blasted	miner	Irish
Sept. 29	Sylvester Ambrusitch	Tamarack Mine	Fall of hanging-wall rock	trammer	Austrian

This summary of accidents taken from the Houghton County Mine Inspectors Report of 1892 shows one year's accidents. The variety of accidents, nationalities, mines and names gives in itself some idea of what working in the local mines in days gone by was like.

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Selected Mining Terms

These terms are used in “Mining in Michigan,” the Michigan Time Traveler page for August 8, 2001, and this Teacher’s Guide.

Adit: an entrance into a mine that is nearly horizontal

Captain: a supervisor

Drift: an underground tunnel that follows a vein in the mine; a crossways tunnel in a mine that connects two larger tunnels

Hanging-wall rock: rock that lies above the vein of ore in the underground tunnel.

Lander: a person who moves mine cars (skips) onto and off the cage so that loaded cars go to surface and are replaced with empty cars or cars with supplies to go underground. The lander signals the hoist operator with a bell or buzzer when the cage is to be moved up or down the shaft.

Level: a horizontal passage in a mine intended for regular working and transportation

Mill: a machine in which ore is crushed; the building that contains the mill

Mucker: a worker who moves or loads muck (rock, dirt) in a mine

Pasty: a meat pie

Pick-ax: a curved iron bar with one end shaped to a point and the opposite end shaped like a chisel. It is attached at its center to a long handle. It is used for breaking rock or other hard surfaces

Pit: a hole or shaft in the ground. Some copper mines were developed around pits dug by Native Americans thousands of years ago.

Raise: a vertical or inclined opening or passageway connecting one mine working area with another at a higher level

Shaft: a vertical entrance to a mine from the surface

Skip: see “tram”

Tram: a boxlike wagon running on rails (as in a mine)

Timberman: a worker who cuts and installs timber in the mine to support the walls and roof of tunnels

Trammer: a worker who handles movement of the trams to bring empty trams to the work area and remove and empty the full trams

Vein: a bed of useful mineral matter in rock