

Episode One

Hard Rock Mining

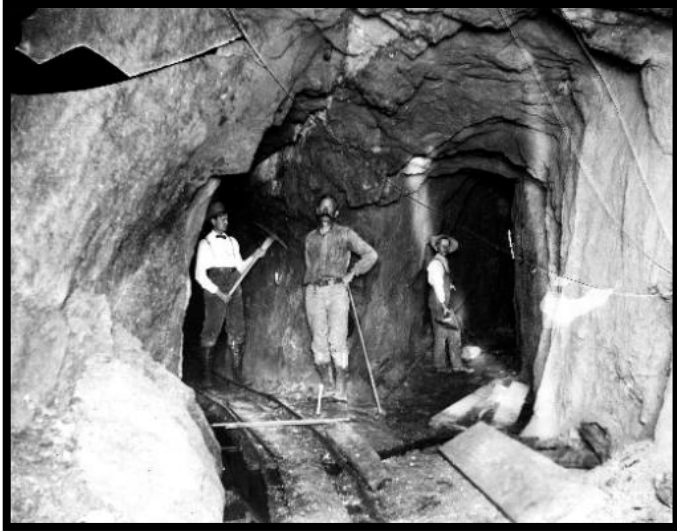
By late 1849, much of the easy gold had already been taken from the streams and rivers of the California Mother Lode. With picks and dynamite the miners started digging deep into the hills. Their narrow tunnels were called hard rock mines.

The mines went down thousands of feet below the surface to where the gold was trapped in the thin sheets, or veins, of a white rock called quartz. They called these quartz veins “drifts.” The miners were looking for quartz with a dark brown stain. That stain was rust – which that meant there was iron trapped in the quartz. The miners knew that if there was iron, there might also be gold!

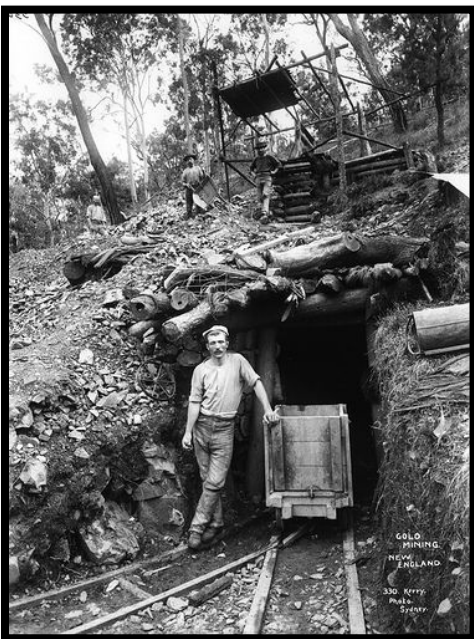
These hearty miners were driven by gold fever and the hope that their next swing of the pick or blast of dynamite would bring them riches and prosperity. Digging a gold mine was very hard and very dangerous work!

Today there are thousands of miles of abandoned hard rock mine tunnels following the quartz drifts deep below the foothills of the Mother Lode. The Priest and Gold Bug Mines at Placerville’s Gold Bug Park are the only hard rock gold mines in California which you can still tour.





When a main quartz drift splits in different directions the miners would typically follow them both. This is called a crosscut.



Hard rock mines typically were dug slightly uphill. This was so an ore car, heavily loaded with hundreds of pounds of rock, could more easily be pushed out of the mine by one man. Also, in the rare chance the miners dug into an underground water deposit, the downhill slope would let the water flow out more easily.



Deep underground the miners worked at an exhausting pace. With several hard working men crowded into such a small place the air would get thin. It became difficult to breathe. The solution was to dig holes, called air shafts, straight up from the mine tunnel to the surface.

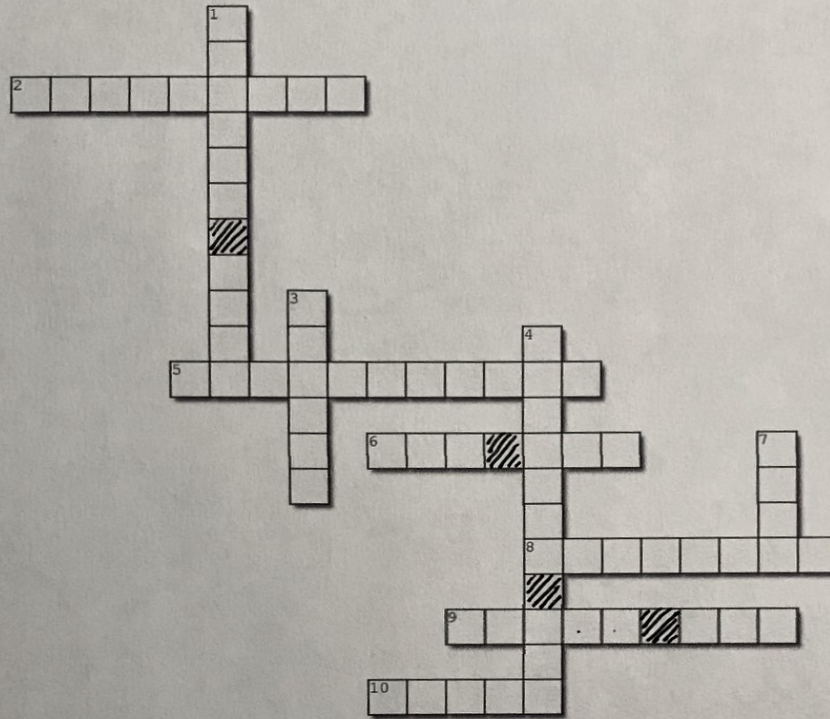


Hard rock mines were dangerous places to work. There was always the threat of cave ins. Thick and sturdy wood timbers were often placed strategically along the tunnels to brace and shore up the surrounding rock.

Name: _____

Hard Rock Mining

Watch Episode One to learn some of the vocabulary words the miners used.
This will help you fill out crossword puzzle.



Created using the Crossword Maker on TheTeachersCorner.net

Across

- 2. Thin deposits of minerals coming from flowing water.
- 5. rocks changed by pressure and heat
- 6. A metal box on rails that carries rock out of a mine.
- 8. Explosive material that will break rocks.
- 9. When a tunnel is dug away from the main quartz drift.
- 10. Thin layers (veins) of gold bearing quartz buried deep underground.

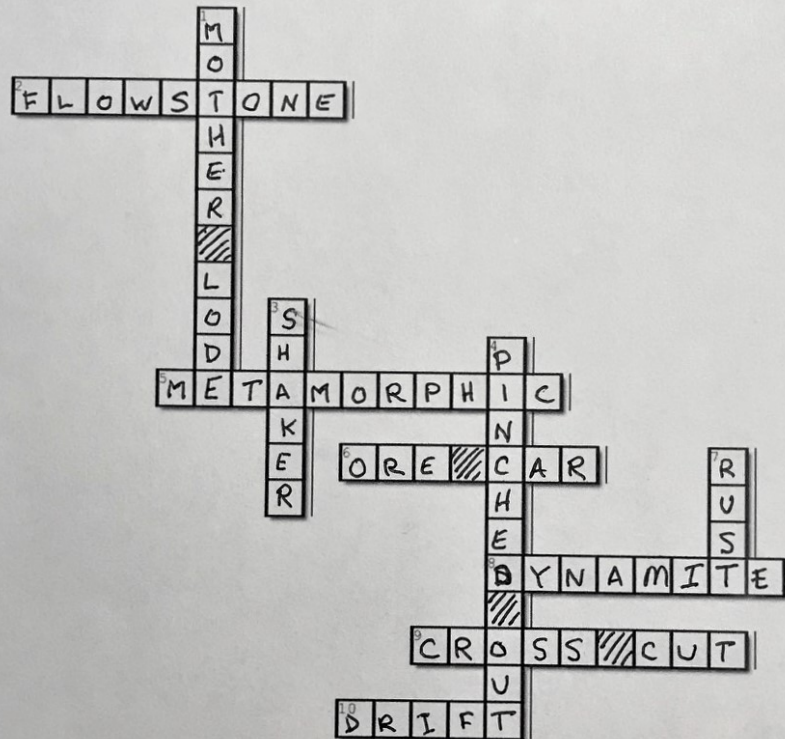
Down

- 1. Where much of the California Gold Rush occurred.
- 3. A miner who holds the steel drill when carving a hole for dynamite
- 4. When a quartz vein suddenly ends.
- 7. This happens when metal (iron) gets wet. It's looks like a brown stain on quartz.

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Vocabulary

- **Metamorphic rock:** rocks changed by pressure and heat.
 - **Pinched out:** when a quartz drift or vein suddenly ends.
 - **Drift:** thin layers (veins) of gold bearing quartz buried deep underground.
 - **Mother Lode:** the area where much of the California Gold Rush occurred.
 - **Cross cut:** a tunnel that's dug away from the main quartz drift or vein.
 - **Ore car:** a wheeled box on rails that carries rock out of the mine.
 - **Flowstone:** thin deposits of minerals coming from flowing water.
 - **"Fire in the hole!":** a safety warning when the dynamite fuse is lit.
 - **Shaker:** the miner who holds the steel drill.
 - **Powder Monkey:** the miner who specializes in using dynamite.
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Think About It... Please write down a few of your thoughts:

- As a '49er, what would your typical day be like?
- What would you do if you found a lot of gold?
- What do we use gold for today?

These websites can provide more information about Hard Rock Mining

kidskonnnect.com/history/california-gold-rush/
westernexpansion.mrdonn.org/goldrush.html