

Geology of Iowa

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What is geology?

CNN World

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Promiscuous women cause earthquakes, Iran cleric says

April 20, 2010 | By the CNN Wire Staff

Women who dress provocatively and tempt people into promiscuity are to blame for earthquakes, a leading Iranian hard-line cleric has apparently said.

The prayer leader, Hojatoleslam Kazim Sadeghi, says women and girls who "don't dress appropriately" spread "promiscuity in society."

"When promiscuity spreads, earthquakes increase," he says in a video posted Monday on YouTube, apparently of him leading Friday prayers in Tehran, Iran, last week.

"There is no way other than taking refuge in religion and adapting ourselves to Islamic behavior," he adds in the video.

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Survivors of an earthquake search debris in Bam, Iran, in late 2003. That quake killed tens of thousands of people.

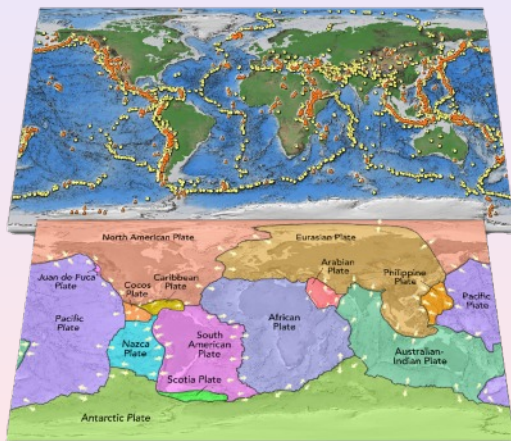
Statistics on Earthquakes

Magnitude	Average Annually
8 and higher	1 ¹
7 - 7.9	15 ¹
6 - 6.9	134 ²
5 - 5.9	1319 ²
4 - 4.9 (estimated)	13,000
3 - 3.9 (estimated)	130,000
2 - 2.9 (estimated)	1,300,000

¹ Based on observations since 1900.

² Based on observations since 1990.

Location of earthquakes



World Map

Find these spots:

1. Himalayan Mtns
2. Andes Mtns and trench offshore
3. Hawaii
4. Japan
5. Ural Mtns
6. Mid-Atlantic spreading center

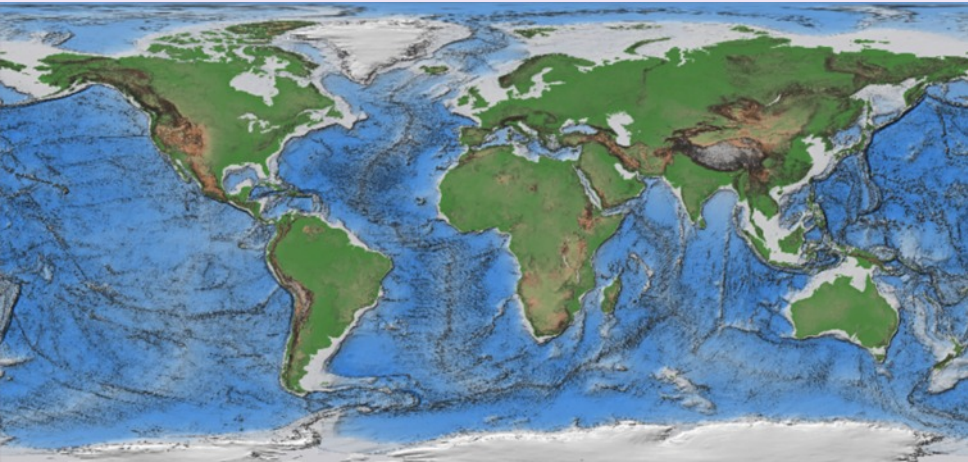
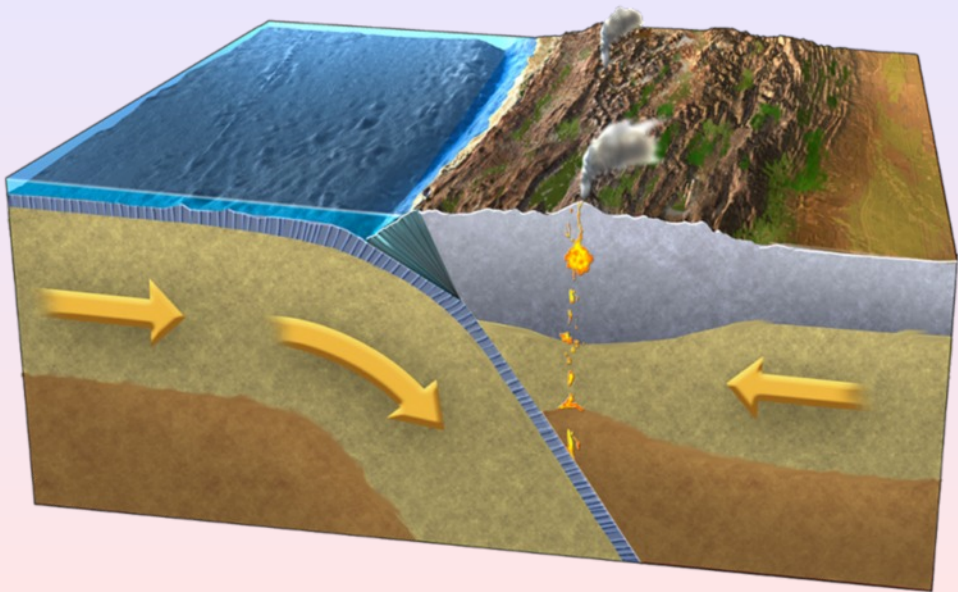
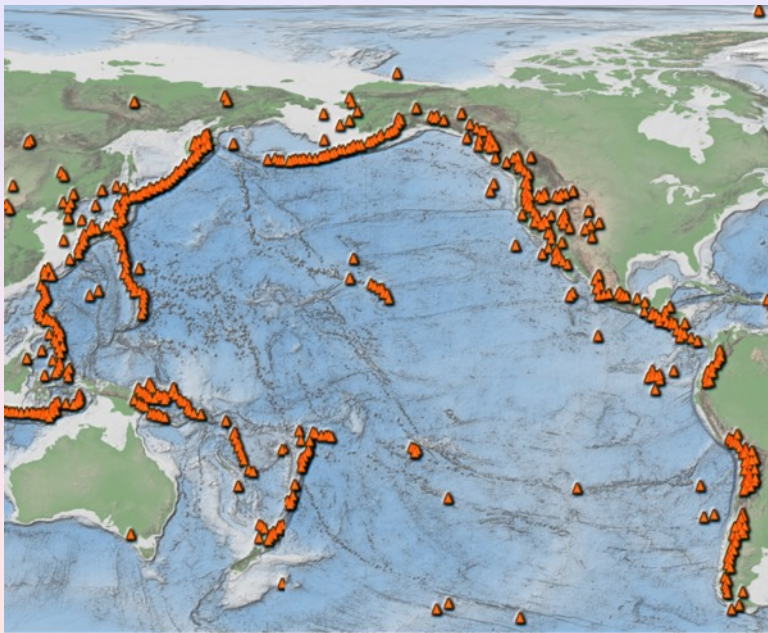


Plate tectonics: Subduction zones



Ring of Fire



Volcanoes



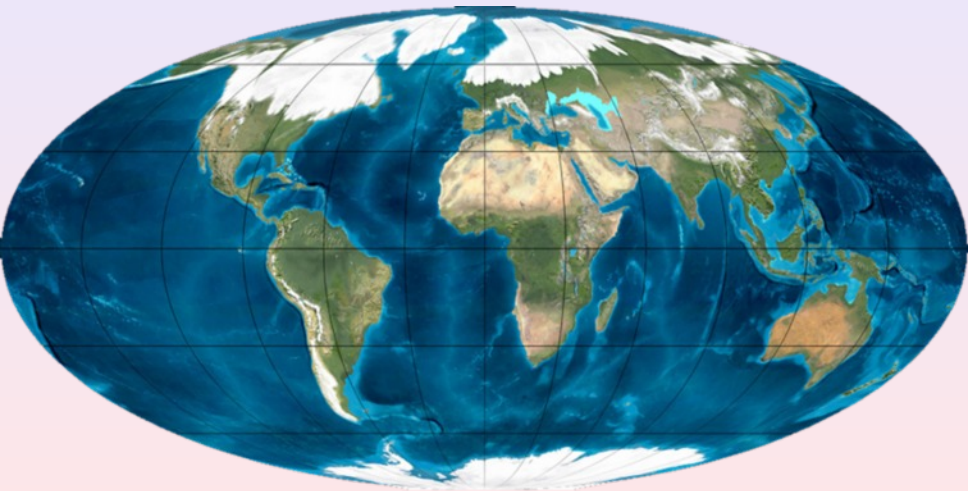
The Upper Midwest

Find these spots:

- | | | |
|----------------------|-------------------|--------------------|
| 1. Dubuque | 3. Lake Superior | 6. Minnesota |
| 2. Mississippi River | 4. Lake Michigan | 7. Des Moines Lobe |
| | 5. Driftless Area | |



Glaciation



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Glacial erratic



The Dubuque Area 450 million years ago



Calcite and limestone



My daughters, Tess and Ananda, in Maquoketa

Calcite is the mineral that makes much of the rock limestone.

Most of the world's caves are in limestone.

Why?



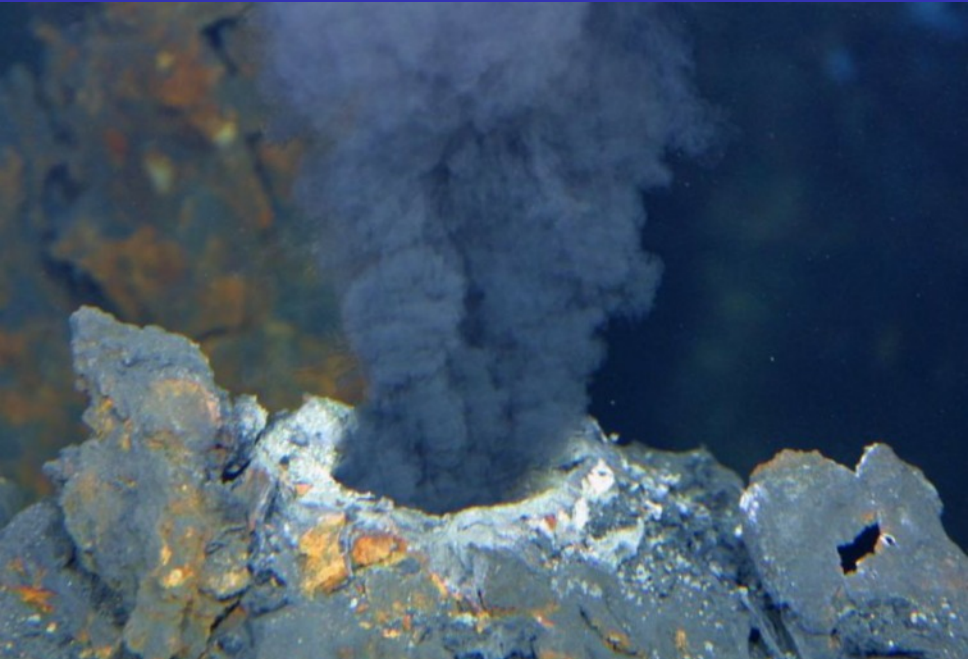
Crystal Lake Caves, Dubuque



Galena

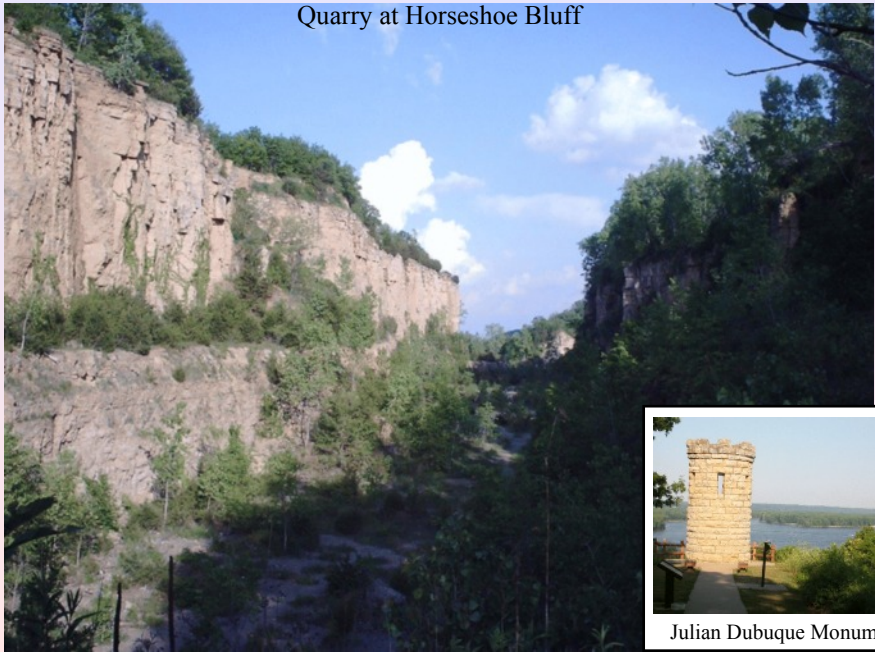


How did the galena get here in the first place?



Julien Dubuque and the Mines of Spain

Quarry at Horseshoe Bluff



Julien Dubuque Monument

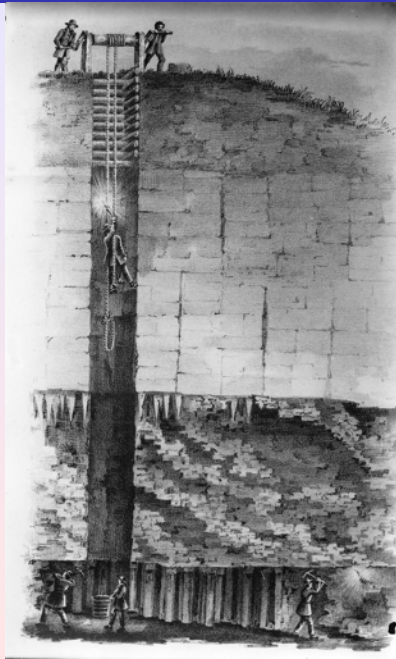
Mining



“This road collapse along Hill Street in Dubuque occurred on November 12, 1983, and probably was caused by sinking of surface materials into the abandoned workings of the Avenue Top Mine. Photo by Steve Gustafson, Dubuque Telegraph Herald.”

- Approximately 500 mining operations were established at Dubuque after the year 1820.
- It is estimated that miners dug roughly ninety miles of tunnels
- They sunk between 700 and 2,000 shafts ranging from 20 to 250 feet in depth

Early mine



One of the deepest Dubuque mines, about 210'

<http://www.encyclopediadubuque.org/index.php?title=MINING>



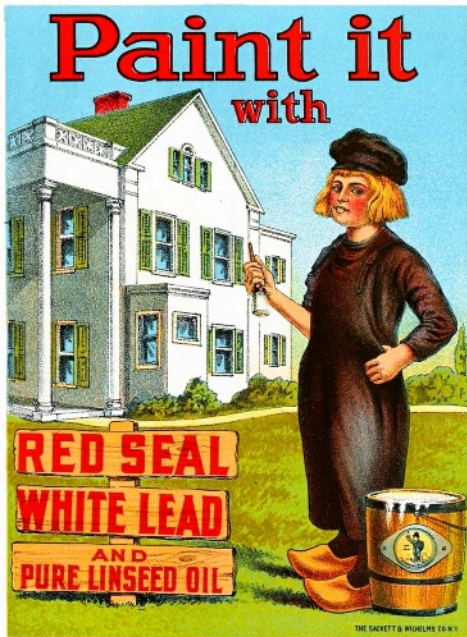
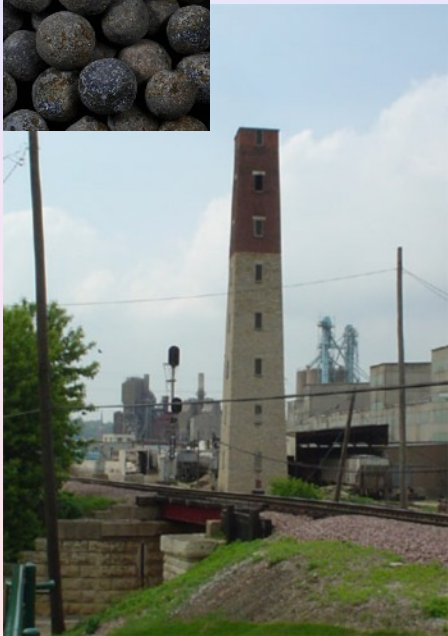
Modern lead mine in Peru




Smelting the ore



What was it used for?



Why don't we use it much now?



Lead poisoning

Lead buildup in the body causes serious health problems

Symptoms

- Headaches
- Irritability
- Reduced sensations
- Aggressive behavior
- Difficulty sleeping

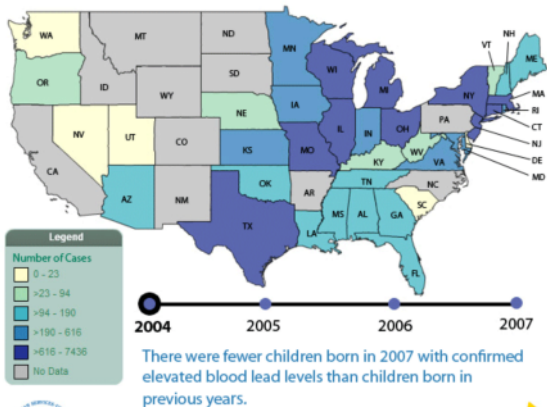
Additional complications for children:
Lead is more harmful to children as it can affect developing nerves and brains

- ▶ Loss of developmental skills
- ▶ Behavior, attention problems
- ▶ Hearing loss
- ▶ Kidney damage
- ▶ Reduced IQ
- ▶ Slowed body growth

Other symptoms:

- Abdominal pain
- Poor appetite
- Constipation
- Anemia

Childhood lead poisoning | Number of children born in the same year and tested before age 3 with confirmed elevated blood lead levels



Iowa's Success
Linking Lead Exposure to Risk Factors



CDC's Environmental Public Health Tracking
www.cdc.gov/ephttracking



