Have your clicker ready.

1906: San Francisco on fire

1906: San Francisco: a destroyed city
1994: Northridge earthquake
magnitude 6.7
cost $20 bill
57 dead

December 26th, 2003
Bam earthquake, Iran

The December 2003 Bam earthquake:
How many people died?

A. 1000  
B. 3000  
C. 10,000  
D. 30,000  
E. 100,000

The Bam earthquake
Why was the death toll so high?

A surprise or unusual event?
A very large magnitude?
The proximity to the city?
The resilience of buildings?
Environmental Geology – Introduction

GEO106: Extra credit

For submission of news articles
Max five articles
Quarter grade point available

http://www.geology.wisc.edu/courses/g106

Overview

Syllabus:

Fundamentals:
- Rocks and minerals

Internal processes:
- Plate tectonics, earthquakes, volcanoes

Surface processes:
- Rivers, coastal, mass movements, climate

Resources:
- Water, mineral, energy, waste, pollution

Minerals and Rocks

- Basic Vocabulary of Geology
- Foundations and Building Materials
- Important Natural Resources
- Impacts on Human Health

Internal Processes:
Plate Tectonics
Internal Processes: Earthquakes

Bhuj, India: More than 30,000 dead

Internal Processes: Volcanoes

Montserrat 1997

Surface Processes: Streams

- Agents in Shaping the Earth's Surface
- Habitat for Aquatic Species
- Flooding as a Human Hazard

Surface Processes: Costal deposition and erosion

Hurricane Georges takes homes off the Florida Keys
**Surface Processes:**

**Mass movements**

Mass movements are often triggered by earthquakes and storms. This slide was triggered by the Northridge earthquake.

**Glaciers and deserts**

The Wisconsin landscape is largely the result of glaciation. The capitol is built on a drumlin.

**Climate change**

Global average temperatures do appear to be increasing...

Are we the cause?
Are the increases significant?

**Water Resources**

- Groundwater Processes
- Joint Management of Groundwater and Surface Water
Environmental Geology – Introduction

Water Management in Florida’s Everglades

- Flood Control, Water Supply + Ecosystem Restoration

Waste Disposal and Water Pollution

- Landfill Siting
- Surface and Groundwater Contamination

Mineral Resources

- Mineral resources only found in special locations

U.S. Material Consumption Trends

- 1950 to 1990: US population grew by 65%, material consumption by 130%

Environmental Impacts of Mining

- Acid Mine Drainage
- Tailings Waste
Environmental Geology – Introduction

Resources: Energy

As societies advance, they consume more energy.

Resources: Renewable Energy

- Hydroelectric
- Geothermal
- Wind
- Solar

Resources: Radioactive Waste

- Mined Geologic Repository at Yucca Mountain

Resources: Geology and Health

- Asbestos
- Arsenic
- Radon

How Radon Causes Lung Cancer
If Earth's history is equated to a 24-hour day, approximately when did humans arrive on the scene?

1 hour ≈ 190 million years

What is the most abundant element in the Earth as a whole?

- Fe
- C
- O