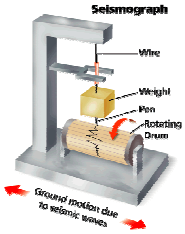
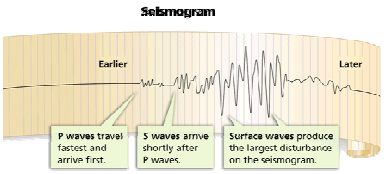
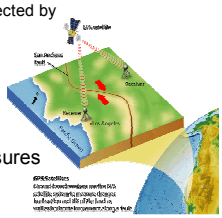




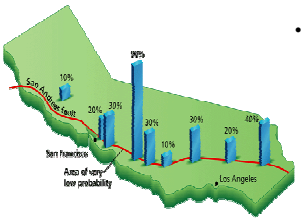
Earthquake Monitoring Instruments

- **Tiltmeter**: measures tilting or raising of ground
  - consists of two liquid-filled bulbs connected by a stem
- **Creep Meter**: measures horizontal movement of ground ("creep")
  - uses a wire stretched across a fault
- **Laser-Ranging Device**: also measures creep
  - but with lasers!
- **GPS Satellites**: can detect changes in elevation and horizontal movement



Mapping Faults

- Geologists use seismographs, tiltmeters, creep meters, satellites and other devices to map faults
  - to predict specific earthquake risk
  - to better understand faults, and improve predictions



- **Friction**: force that opposes motion of one surface against another
  - Low friction, low risk, small earthquakes
  - High friction, high risk, severe earthquakes

Earthquake Dangers

- **Shaking**: can trigger landslides, avalanches, damage and destroy buildings
- **Liquefaction**: when violent shaking turns loose soil or sand into mud, buildings can sink, cracks can open
- **Aftershocks**: smaller earthquake that hits after the first earthquake, hours, days, months later!
- **Tsunamis**: (*tidal wave*) water displaced by an earthquake forms a large wave, can wash away buildings, people along shore, cause flooding

Earthquake Safety

- Drop, cover, and hold on!
  - Indoors: try to get under a sturdy table or desk, or against an inner wall, avoid window, mirrors, loose objects
  - Outdoors: move to open area, sit down, avoid vehicles, powerlines, trees, buildings

Safer Buildings