Parts of ocean floor

- Continental margins
- Deep ocean trenches
- Abyssal plains
- Mid-ocean ridges
Passive continental margins

- Within tectonic plates
- Edges of oceans that contain divergent plate boundaries
- No earthquakes, no volcanoes
Passive continental margins

- Continental shelves:
  - < 130 meters (425 feet) deep
  - As much as 1500 km (930 miles) wide
  - Very gentle slope
  - Exposed when sea level is lower
Passive continental margins

- Continental slope
  - Fairly narrow (20 km or 12 miles)
  - Elevation drops from continental shelves to deep ocean floor
  - Cut by submarine canyons
Passive continental margins

- Continental rise
  - Gentle slope from continental slope to deep ocean floor
  - Thick piles of sediment carried down slope from continental shelf to ocean floor
Active continental margins

- Ocean-continent subduction zones
- Deep-ocean trenches
- Volcanic arcs
- Earthquakes
- Steep topography
Abyssal plains

- Most of ocean floor
- Deep (around 4 km/13,000 feet) and flat
- Sediment includes wind-blown dust, calcite mud, quartz-rich mud
Mid-ocean ridges

- Surface expression of divergent plate boundaries
- 2.5 km (8200 feet) below sea level
- Higher because of hot, young rock
- Hydrothermal vents
Basic parts of ocean floor

- Continental margins: shallow (< 130 m/425 feet) areas near continents
- Deep-ocean trenches: deepest parts of ocean floor (10 km/33,000 feet deep); surface expression of subduction zones
- Abyssal plains: deep (around 4 km/13,000 feet), flat areas – most of ocean floor
- Mid-ocean ridges: surface expression of divergent plate boundaries; 2.5 km/8200 feet below sea level
Active vs. Passive Continental Margins

Passive Margins:
• Not plate boundary
• Parts:
  – Continental shelf
  – Continental slope
  – Continental rise

Active Margins:
• Convergent plate boundaries
• Narrow continental shelves
• Deep-ocean trenches
• Earthquakes, volcanoes