

What causes the topographic features of the ocean floor?

Theory development

Suess – Gondwanaland

Wegener – matching the shapes and patterns of mountains across the Atlantic
→ Continental drift (Pangaea)

Darwin – atoll formation

Hess – sunken islands
- convection cells

Wilson cycle

1. Continental rifting
2. Growth of an ocean (seafloor spreading – divergent margin)
3. Ocean starts to close (convergent margin)
4. Ocean closes (continent-continent collision)

- Transform Faults

- Formation of chains of islands above Hot Spots

Seven major lithospheric plates

Evidence for ocean floor motion

1. Earthquakes distribution
2. Age and thickness of sediments
3. Heat Flow
4. Age of ocean floor
5. Earth's magnetic field and its reversal
6. Internal structure of the Earth
7. Density of the rocks → Isostasy