Studying the Ocean Floor

Geophysical Methods

 Sonar: depth is established through reflecting soundwaves from the ocean floor by measuring the velocity of sound waves in water and the time required for the wave to hit the floor.

 Multi-beam sonar: employs multiple signals to map a stretch of the seafloor

Satellites

Submarines

Oceans Network Canada - Generate sonar data into images

Field study through direct observations on land

Active Continental Margins

Continental slope descends abruptly into a deep-ocean trench; Accumulation of sediments form an accretionary wedge onto the non-subducting tectonic plate at a convergent plate boundary.

Mid-Oceanic Ridges (MOR)

A continuous range of underwater volcanoes that make up 20% of earth's surface; down faulted structures called rift valleys; sea floor spreading at crest of ridges; consists of many layers of basaltic rock.

Structure:

Upper layer - Consisting of pillow lava

Middle layer - Numerous interconnected sheeted dikes

Lower layer - *Gabbro*

Gabbro - intrusive equivalent of basalt

Topographic Units

Continental margins

Deep ocean margins

Mid ocean ridges

Passive Continental Margins

Continental slope - marks the seaward edge of the continental shelf; boundary between continental crust and oceanic crust; represents true edge of continent; represents original rift (Pangea splitting); cut by *submarine canyons*

Continental Rise - at the base of the slope; thick accumulation of sediment in *deep sea fans*, containing *turbidites*

Submarine canyons - steep sided valley with nearly vertical walls

Deep sea fans - the layer of sediment below the submarine fan

Turbidites - fine grained sediment that was deposited by strong downward flow of water containing high amounts of sediment, called turbidity current

---

By **roobear**
cheatography.com/roobear/