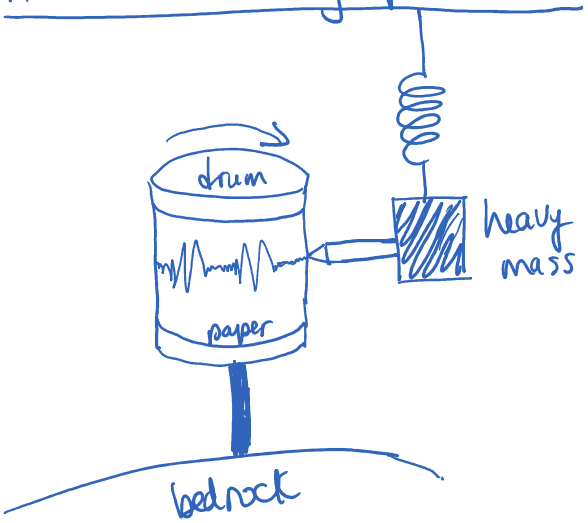
Earthquakes

How a seismograph works



- rotating drum is attached to solid bedrock that shakes in the quake.
- pen attached to heavy mass that has "inertia" and stays still in an Φquake.

Elastic Rebound Theory

- as plates move (2-10 cm/year), friction along the boundaries stops the movement there (= seismic gap.) Pressure builds and finally overcomes the friction = earthquake.
- Then the plates try to "elastically" snap back to their original shape (= after shocks)

Magnitude vs Intensity

Magnitude - a measure of energy released and ground motion in an Φquake.

Mag	ground motion	energy released
5	1mm	1 unit
6	1cm	30 units
7	10cm	900
8	1m	27000

- measured on Richter Scale (no upper limit)
- energy released goes up by 30x for each magnitude
- ground motion goes up by 10x

7	10cm	90	×30
8	1m	27000	
9	10m	810000	

magnitude

- ground motion goes up by 10x

Intensity - a measure of the amount of damage done
- measured on Mercalli scale
- qualitative/descriptive, based on human feelings and observation, not mathematic measured.

Epicentre vs Focus

Epicentre - the point on ⊕'s surface directly above focus

Focus - the place inside ⊕ along the fault where the first break happens
- P,S, L wave start from.

Shadow Zone

Areas on other side of ⊕ where the P and/or S waves don't reach due to the way they react at the different ⊕'s layers

Why? ⟶ Geology 12 !!