2 Notes: Properties, Layers (pg 10, 11)

Properties of Ocean Water

Salinity:

What is salinity?

measure of dissolved minerals (salts) in water

How is salinity measured?

- in "parts per thousand" ~ 100g of sea water has 35g salt
- given as percentage - measured by testing sea water's electrical conductivity

Where do ocean salts come from?

- erosion of rocks
- mine rals/gases released in underwater volcanoes
- decomposing marine organisms

What affects salinity levels?

change in content based on evaporation, rainfall, ice melt, ice formation

Temperature:

What is a Thermocline?

transition layer between warmer mixed water at the surface and the cooler deep water below.

Density:

How do we calculate water density?

$d = \frac{m}{V}$, but water density uses a more complicated equation (linear equation of state)

What water property affects its density?

salinity and temperature

Ocean Layers

The ocean is divided into three temperature and density layers, which vary in their characteristics depending on latitude and depth. Add a description for each of the layers below:

Layer	Temperature	Density
Surface, Low Latitude	- warmed by sun, wind/waves mix heat evenly - 2% of ocean's volume - depth + temp vary with season and latitude	- lower density due to high surface water temp.
Middle, Low Latitude	- thermocline area - temperature and oxygen levels change dramatically	- density levels increase rapidly as water gets colder.
Deep Water and Poles	- little sunlight reaches here → cold, dense - minor warming in summer means a weak thermocline for some polar regions.	- very high density since water is very cold.