Handed back guest lecture write-ups - credit/no credit
More on plant stomata on p 178-179
Equation for δ¹⁸O is for understanding only, we won’t use it for any problems (which is good because I had it wrong yesterday, it’s fixed now)

Fig 14-4 δ¹⁸O from ocean sediments = Proxy for 
(1) ocean temperature and (2) ice volume on land

δ¹⁸O depends on ¹⁸O/¹⁶O in ocn sediments:

δ¹⁸O is directly related to ice volume
Because ice sheets deplete the supply of ¹⁸O₂ from sea water

δ¹⁸O is inversely related to temperature
Because plankton take up higher rates of ¹⁸O₂ when it is colder

From Antarctica, but Greenland is roughly same in last ice age!

Why is CO₂ related to T?
Vote: Weathering
Or Biological Pump

1) Which way does time go?
2) How can you tell the record is not from an ice core?
3) What are the major transitions
How can the biological pump draw down CO2 when it is cold?

- Slow down deep ocean upwelling, reduces return of enriched CO2 water
- But this reduces nutrients supplied by upwelling
- Alternative is turn up plankton photosynthesis
- Climate was more arid, so perhaps dust (source of Fe) provided extra nutrients (recall sequestration article)

The home ice sheet ~20kbp

Cordilleran Ice Sheet
Lake Missoula
Spokane Floods (from Lake Missoula)