

- In May - soil W/ TRB at Noyes
- Soil organisms
- Focus on "Big Picture" - what is important about soil?
- Summary paper - you'll summarize and analyze everything you've learned about CV's soil

Soil organisms:

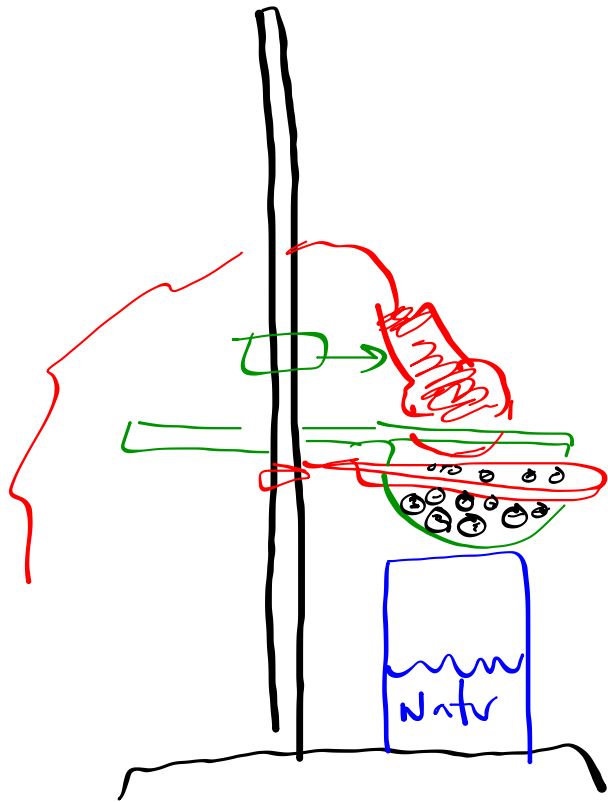
- Soil organisms are part of the soil
- Macroinvertebrates — "bugs" we can observe without a microscope (soil dissection)
- Microinvertebrates — "bugs" we need a scope to see (this week)

Soil invertebrates run the machinery that allows waste to be recycled in the soil

- They take large pieces of organic waste material and break it down

- Ultimately, the material can be used again by organisms (PLANTS)

SOIL INVERTEBRATES MAKE
FERTILIZER FROM WASTE



- label ringstand with your names (groups of 3 only)
- Plug in and turn on - leave on the back counter

Nutrients:

- Soils are more likely to retain + charged nutrients (red \ominus water was repelled; blue water was absorbed) \oplus
- Since clay is highly negatively charged it is more likely to repel \ominus nutrients - Sometimes people need to add sand or silt to their soil to achieve balance

Three main soil macronutrients:

Potassium: K^+ (positive)

Nitrogen: NH_4^+ (ammonium - positive)
 NO_3^- (nitrate - negative)

→ Phosphorus: PO_4^- (phosphate - negative)

Sometimes even fertilized soils have a phosphorus deficiency - because phosphates don't stick that well in the soil

Soil organisms;

- Take big chunks of organic material and convert it into smaller chunks of organic material (pre-chewed food - one type of organism makes it easier for another to eat)
- Take organic material (large molecules) and convert it into inorganic material (smaller) amino acids $\rightarrow \text{NH}_4^+$ and NO_3^-
- Take one inorganic molecule and turn it into another type ($\text{NH}_4^+ \rightarrow \text{NO}_3^-$)
BECAUSE OF THIS PROCESS, soils are often deficient in nitrogen as well

