COLUMN CHROMATOGRAPHY (we will not be doing this)
a "preparative" technique

- Solvent reservoir
- Sand (load A+B+C solution here)
- Polar adsorbent (Silica Gel, SiO$_2$ or Alumina, Al$_2$O$_3$)
- Glass wool

**Polarity:** $A > B > C$

1. Load onto sand
2. "Elute" with solvent or solvent mix
3. Collect bands as they elute.
How a column separation works:

**Partitioning:**

\[ A_{\text{solute}} \xrightarrow{K_A} A_{\text{adsorbed}} \]

\[ B_{\text{solute}} \xrightarrow{K_B} B_{\text{adsorbed}} \]

Difference in partition coefficients leads to separation.

More polar compounds bind more strongly.

Generally, progress from less polar to more polar solv.

Disadvantages: can't see bands usually.

Takes a long time.
THIN-LAYER CHROMATOGRAPHY (TLC):

"LOADED" TLC PLATE

Apply dilute sol’n in volatile solvent

DEVELOPED TLC PLATE

Best if $R_f$ values between 0.4 & 0.7

Visualize: Chemical Stains or Fluorescent Indicator (UV)