

# Separation Anxiety



Through Chromatography

# How would you separate..

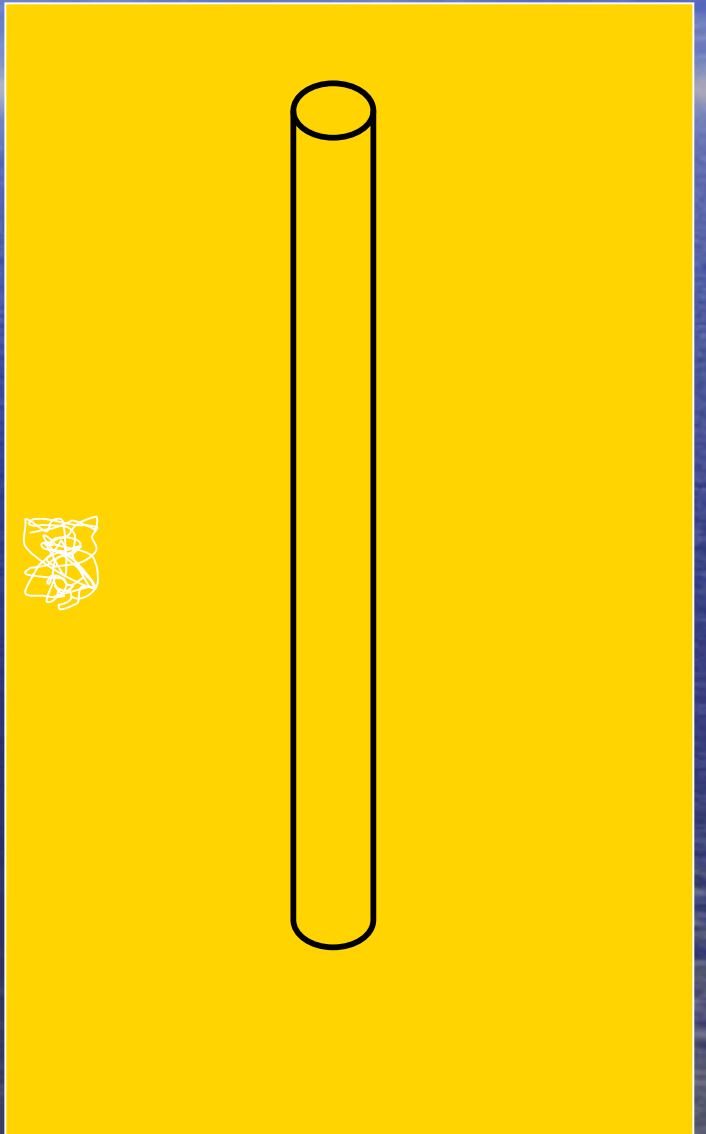
- A mixture of sand and iron?
- A mixture of sand and salt?
- A mixture of water, salt, and sugar?

# Chromotagraphy

- A method of separating mixtures that has one component that moves and one that is stationary.
- We will use liquid chromatography, where the moving part is liquid and the stationary part is silica gel

# To build a chromatography column

- 1st plug the bottom with fiber



# To build a chromatography column

- 1st plug the bottom with fiber
- Fill the straw with silica gel



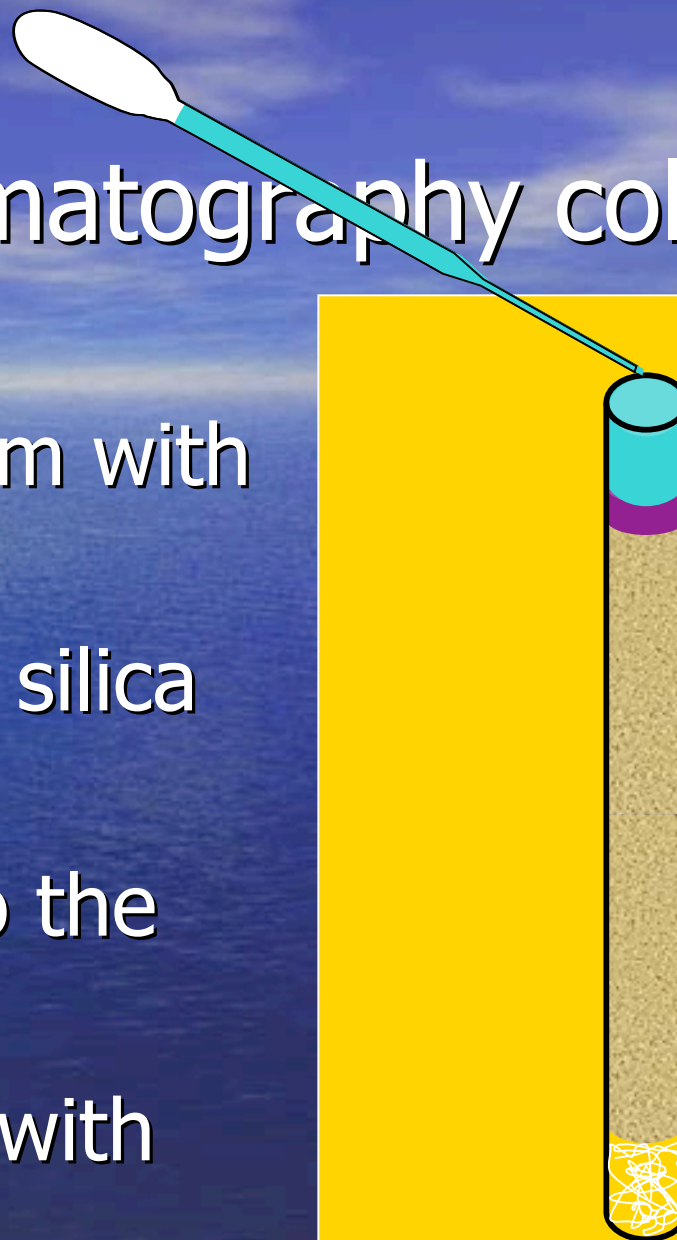
# To build a chromatography column

- 1st plug the bottom with fiber
- Fill the straw with silica gel
- Add the sample to the top of the column



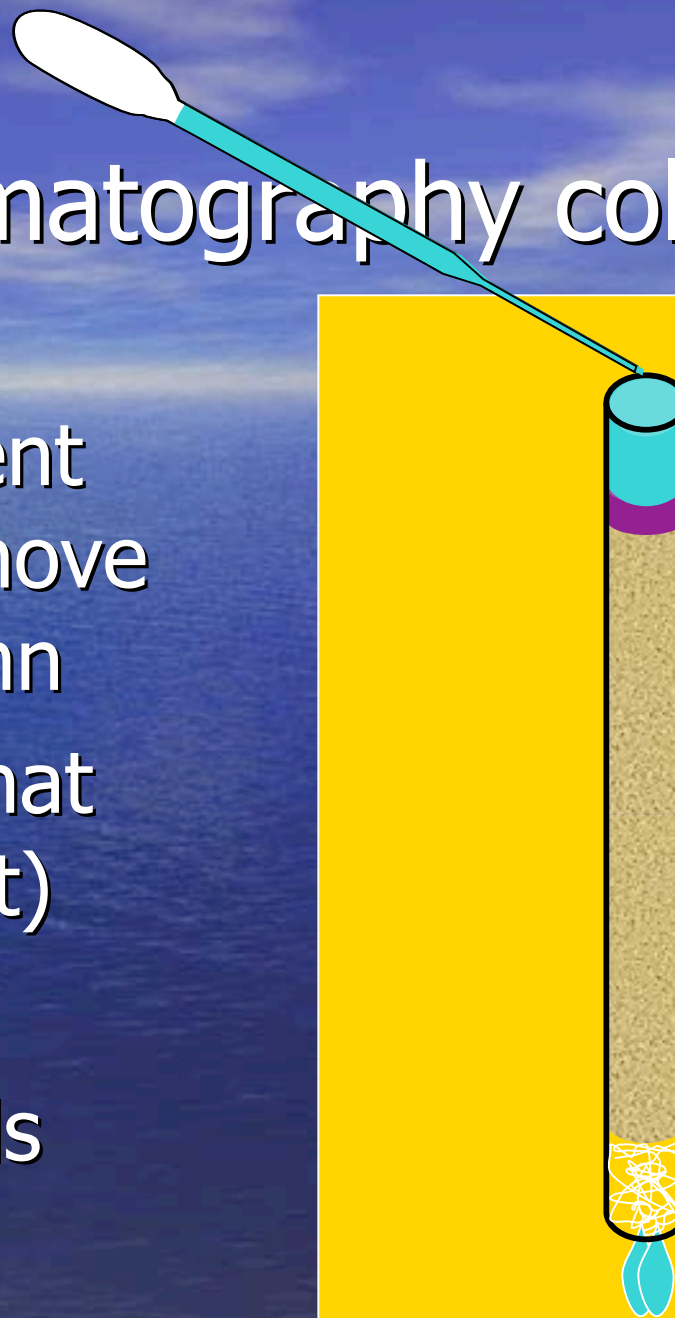
# To build a chromatography column

- 1st plug the bottom with fiber
- Fill the straw with silica gel
- Add the sample to the top of the column
- Wash the sample with solvent



# To build a chromatography column

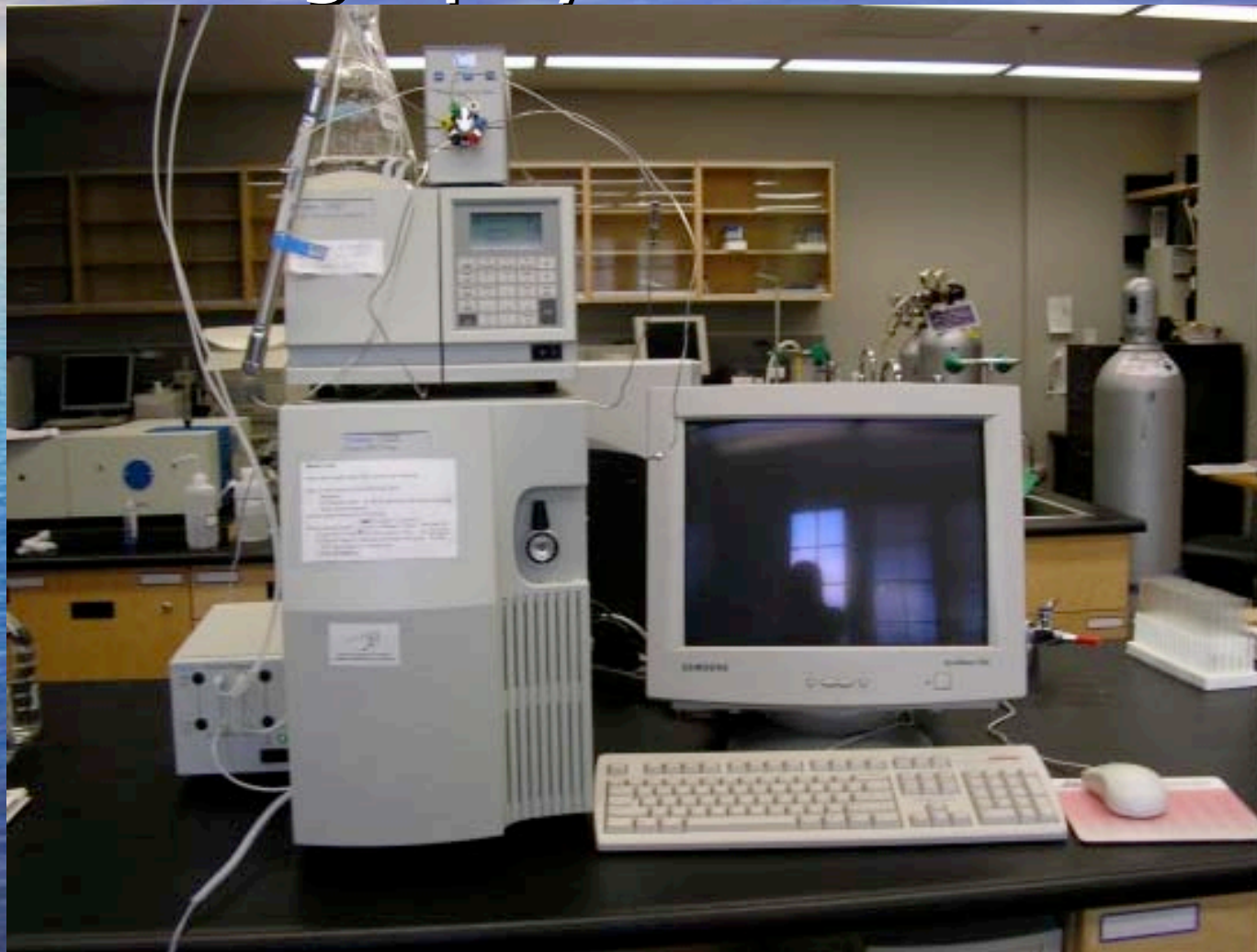
- Keep adding solvent while the solute move through the column
- Catch the drops that come out (effluent)
- Test those
- Different chemicals different times.



# Uses for chromatography

- Testing for components in an unknown mixture.
- What is in your water?

# HPLC High Pressure Liquid Chromatography



# HPLC High Pressure Liquid Chromatography

Different types of columns for different substances



# HPLC High Pressure Liquid Chromatography

- Same technique, different column
- Separates ions – can't use color
- Sensitive detector to determine when ions come out
- Can test to one part in a billion
- Prints a graph

# HPLC High Pressure Liquid Chromatography

- Prints a graph
- Different ions come out at different times
- Bigger peaks more of that ion.

