SEPARATION TECHNIQUES

Are mixtures PURE or IMPURE?

**IMPURE**

- homogeneous
  - contact solution
  - saline (IV fluid)
  - alloys
- heterogeneous
  - milk
  - sand in water
  - blood
How would we separate sand mixed with water?

- Decanting: ✓
- Distillation: ✓
- Evaporation: ✓
- Centrifugation: ✗
- Chromatography: ✗
FILTRATION
works by removing particles large enough to get caught by a barrier

EVAPORATION
if you're not interested in the liquid, allow it to evaporate and leave the solid behind
**DECANTING**

let the solid settle then pour the liquid off the top

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**DISTILLATION**

distilling the liquid in another container using heat to keep liquid

also used when you have 2 liquids with different boiling points, like crude oil!
CENTRIFUGATION
used to separate a solid with a different DENSITY than the liquid, like with BLOOD

CHROMATOGRAPHY
used to separate components in a dye

* a solvent moves up a paper by capillary action
* as the solvent meets the mixture, it dissolves it and moves up the paper
* diff. compounds in the mixture move at diff. rates due to diff. solubilities
What about salt dissolved in water??

- filtration
- evaporation
- decanting
- distillation
- chromatography
- centrifugation

What about nails in sand or steel in a landfill?

- filtration
- evaporation
- decanting
- distillation
- chromatography
- centrifugation
- magnets

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[Image of a glass of water and a landfill scene]
Exit:
To leave class answer each of the following questions:

1. A mixture can be separated by ________ means.
2. To separate a mixture of liquids you should use ________.
3. Name two ways to separate a solid from a liquid.
4. How could you purify sea water into drinking water?
5. What separation technique is being demonstrated when a mud-puddle disappears throughout the day?
6. What technique is being demonstrated when a spot of ink “runs” on your paper when it gets wet?