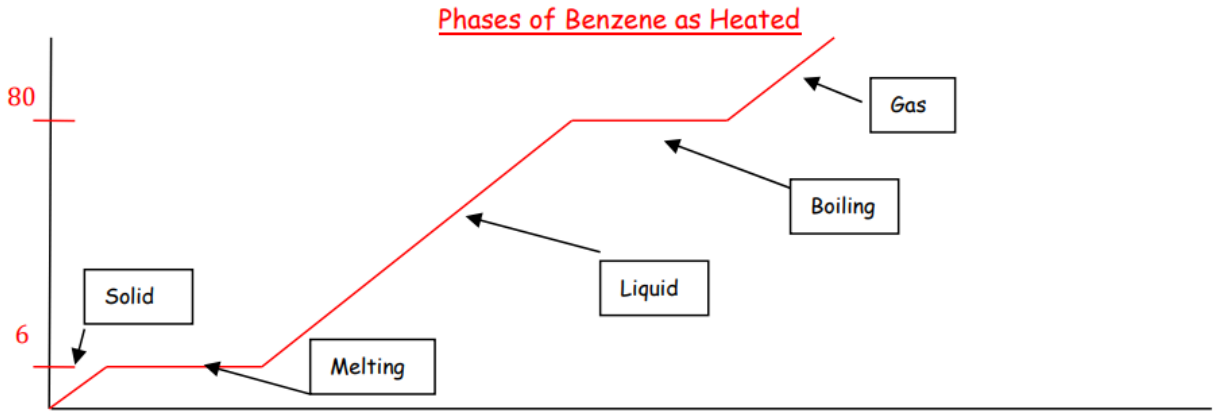
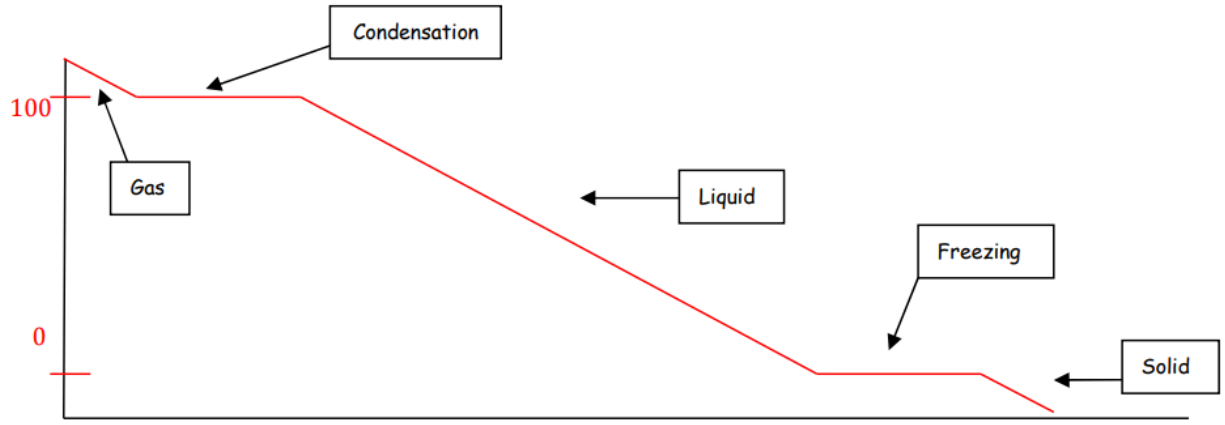
States of Matter

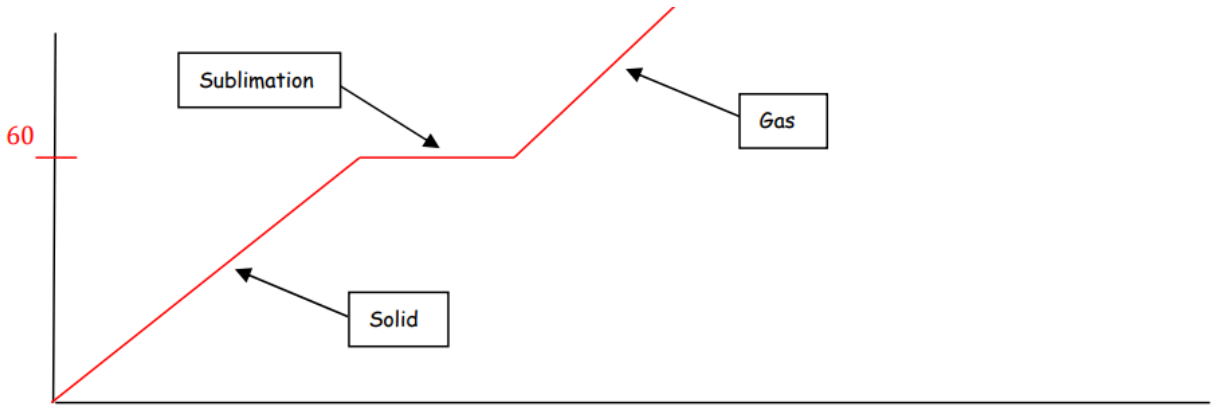
1.



2.



3.



Classify Molecules, Atoms, Ions

1. Atom,

Ion,

Atom,

Molecule,

Ion,

Atom,

Molecule

2. 6 phases (air on top)

3. Homogeneous, Heterogeneous, Heterogeneous

4. Element

5.
Similar in that both are homogeneous (composed of one phase). They differ in that a compound is a pure substance and a solution is a mixture of two pure substances.

6.
a) True solution
b) Mechanical mixture
c) element, compound or solid solution
d) element, compound or solid solution
e) element, compound or solid solution
f) Compound or soluion

7.
Sugar — Pure substance
Dirt — Mixture
Air — Mixture

8. 5 wood, graphite, metal, eraser and paint (2 colors).

9.
a) Compound
b) Mixture
c) Mixture
d) compound
e) Mixture

f) Mixture
g) Compound
h) Mixture
i) Mixture
j) Mixture

Filtration Techniques

1. The water will be on top as it has a lower density.
2. Distillation would work in separating and saving both the solid and liquid. If the liquid doesn't matter evaporation, solvent extraction, or recrystallization will work.
3. If the solvent completely evaporates all dissolved crystals will come out of the solvent. The idea is to separate each substance and so just one is recrystallized by allowing some of the solvent to remain with the other crystals still dissolved.
4.Filter the liquids from the solids. Use a magnet to remove the iron filings from the sand, pour off the gasoline or use a separatory funnel to remove the gasoline, distill the water at 100℃.
5.Filter to separate the solids from liquids. Use gravity filtration (put sands in a shaker and the denser black sand will settle to the bottom) to separate the sand types. Distil to separate the alcohols (methanol will boil off first as it has a lower boiling point).
6. Put mixture in separatory funnel to solvent extract with alcohol to dissolve only naphthalene. Distill alcohol later. Put the remaining mixture in a separatory funnel again to solvent extract using water to dissolve only potassium sulphate. Later distil off water so potassium sulphate remains