The Law of Conservation of Matter

(state the whole thing)

How to determine what phase an element is at any particular temperature on Table S

Don't choose Iron or Bromine at 295 K, they're my examples

	Solid	Melting Point Kelvin from Tab le S	Liquid	Boilng Point Kelvin from Tab le S	Gas
Fe	295 K	1811 K		3134 K	
Br		266 K	295 K	332 K	

State: at 295 K Iron is a solid, while Bromine is in the liquid phase.

Matter Comix

A study guide made by and for Charlie Arbuiso

Vocabulary Words To Memorize

Matter

Element

Compound

Isotope

Mixture

Homogeneous

Heterogeneous

Phase

Pure

Aqueous

Reactant

Product

Counting Atoms in a Chemical formula

(write 6 formulas, including 2 with parenthesis and count the total number of atoms

$Al(OH)_3$ Has 7 total atoms	$Pb(MnO_4)_4$ Has 21 total atoms	Find 6 formulas of your own, don't use mine!
Look in a text book or online	You don't need names of the compounds	Count on your fingers if you have to.

State your favorite element and why you like it, be silly or serious (silly is better). Mine is mercury so I copied the box at right from the periodic table. Now, you should tell what each of those numbers means, which can be rounded, what we can do with them and how (tell how many p, n, and e in each atom). Tell the mass of the MOST COMMON isotope.

200.59 +1 +2

Hg

80

2-8-18-32-18-2

Drawing particle diagrams can show solid, liquid or gas phases, or they can show specific atoms, molecules, or diatomic molecules as well. Sometimes they show both phase and substance. Using just little circles (filled in or not) for atoms, show how you could draw particle diagrams for the three phases (top row). In the second row, you will need to mix up your shapes, for example, if carbon dioxide is drawn as one hollow circle with 2 filled in circles, then the oxygen molecules should be little filled in circles too. Keep consistent in each box.

With gas and solid in the middle bottom row, make sure the solid is at the bottom of the box, and is organized into a tight pattern, with the gas floating in space. Finally, three different gasses need three different shapes or coloring, and they are all floating, mixed together.

Generic Solid	Generic Liquid	Generic Gas
Carbon dioxide CO_2 and oxygen O_2 gases mixed	Methane gas CH_4 with copper metal	Nitrogen N_2, Carbon Monoxide CO, and Helium He gases mixed

Mixtures are physical blends of pure substances. They do not have formulas because they are not pure as mixtures, and there are no "official" formulas for them. You can mix any amounts of chocolate syrup and milk to make what could be called chocolate milk. Too much chocolate syrup and it's not refreshing, not enough syrup and it's grey and dull in your mouth. Mixtures are not like carbon dioxide, that always has 1 atom of carbon bonded to two atoms of oxygen CO_2 ratio of 1:2.

In this box...

Tell the "one liner" from class how to remember how to separate mixtures. Then give 3 examples of mixtures and the physical property you could take advantage of to get them apart.

Draw a particle diagram for each of the following formulas	
H_2O wata	
NH_3 ammonia	
C_2H_4 ethene	
CH_3OH methanol	
BF_3 boron trifluoride	
PCl_5 phosphorous pentachloride	