ESS Term 1 Review
Part 1

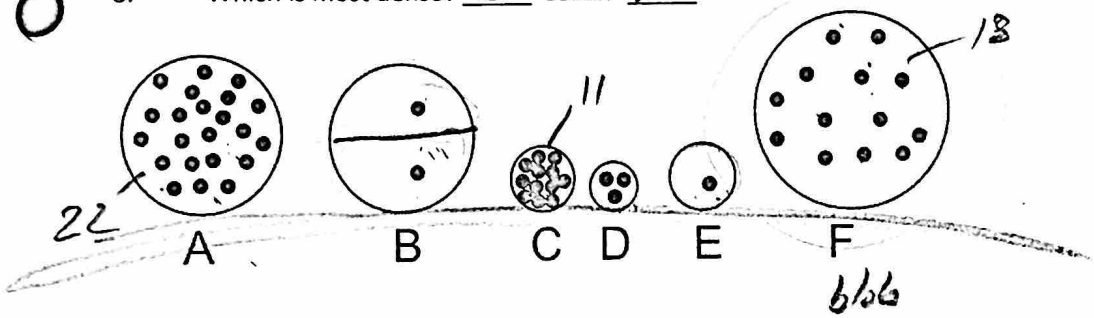
Name: Key

Define each of the following:

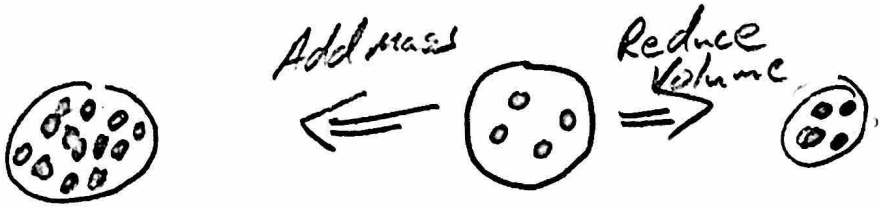
1. Mass – Stuff (amount of stuff in something) matter
2. Volume – size (amount of space something takes up)
3. Density – Crowdedness
4. Weight – The force of a planets gravity pulling on an object.

Examine the objects below.

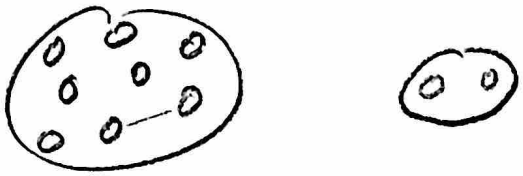
5. Which object has the most volume? F Least? D
6. Which has the most mass? A Least? E
7. Which has the most weight? A Least? E
8. Which is most dense? C Least? B



9. Show two fundamentally different ways to make this ~~box~~ more dense. In each case, explain what changes you made to mass, volume, or weight.



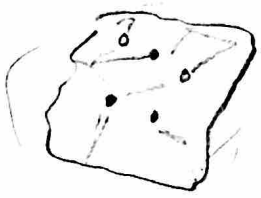
10. Draw two objects (similar to my drawing above) that have different masses but similar densities.



11. Suppose you heat a sealed container full of gas (this could be air, hydrogen, or something else)...

a. What happens to the motion of the gas molecules?

Speed up



b. What happens to the pressure of the gas?

Increases

c. What is pressure, and why does it change?

The force of the gas particles pushing. They push harder when they move faster.

d. If the container is stretchy, what will happen to its volume? Why?

Bigger. The gas particles pressure pushes it outward.

e. If the container is stretchy, what will happen to its density? Why?

Density decreases, because the size increases, so it is less crowded inside.

12. Suppose you compress a sealed container full of gas (this could be air, hydrogen, or something else)...

a. What happens to the temperature of the gas?

Heats up

b. Explain why compression changes the temperature in this way.

When you squeeze, you push the gas particles, and make them go faster.

d. What has happened to the volume of the gas? Why?

size decreases, because I compressed it.

e. What has happened to the gas' density? Why?

More dense → I compressed it, so its particles are more crowded.

12.5 List the colors of stars, from hottest to coolest.

Blue, White, Yellow, Orange, Red