

## Matter

What is matter? - what makes everything  
- anything that weighs or takes up space

How do we measure it? - scale (weigh it)  
- size / volume

Matter - Any substance that has mass and takes up space by having a volume

NOT matter - light - no mass, doesn't take up space  
sound, vacuum (empty space)

On Earth, we can determine the amount of matter by *weighing* it (on Earth, mass and weight are linked together, but are NOT the same thing).

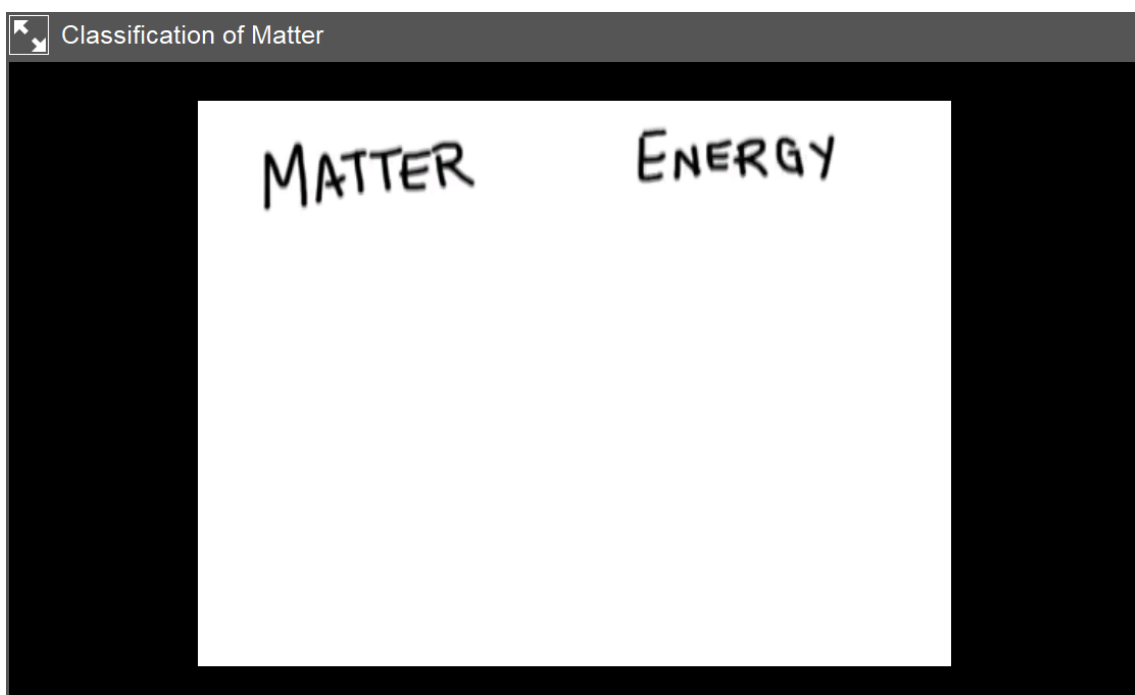
Mass - (chem) - a measure of how much stuff there is.  
(kg) (phys) - a measure of how hard it is to change what an object is doing.

Weight - (N) how hard Earth pulls on an object

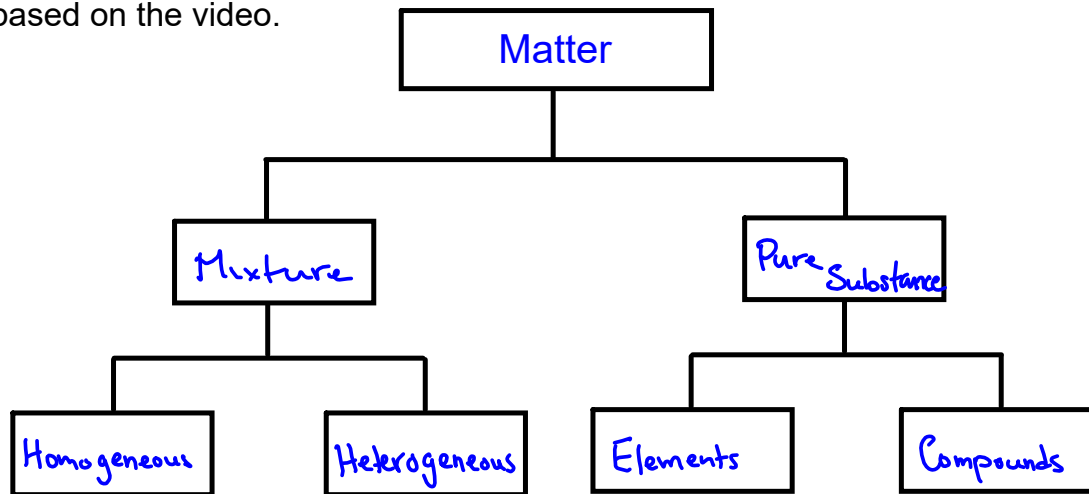
On Earth

$$F_g = mg$$

weight →  $F_g$       ↑ mass      ← acceleration due to gravity  
( $9.8 \text{ m/s}^2$ )



Fill in the table based on the video.



Define each of the terms in the boxes.

Mixture - a physical group of more than 1 type of substance  
(pizza)

Pure Substance - only one type of matter (cannot be broken down  
into parts by physical means)  
(aluminum)

Homogeneous Mixture - a group of more than one substance that  
looks the same (tap water)

Heterogeneous Mixture - a group of more than one substance that  
looks different (we can recognize the  
different parts.) (pizza)

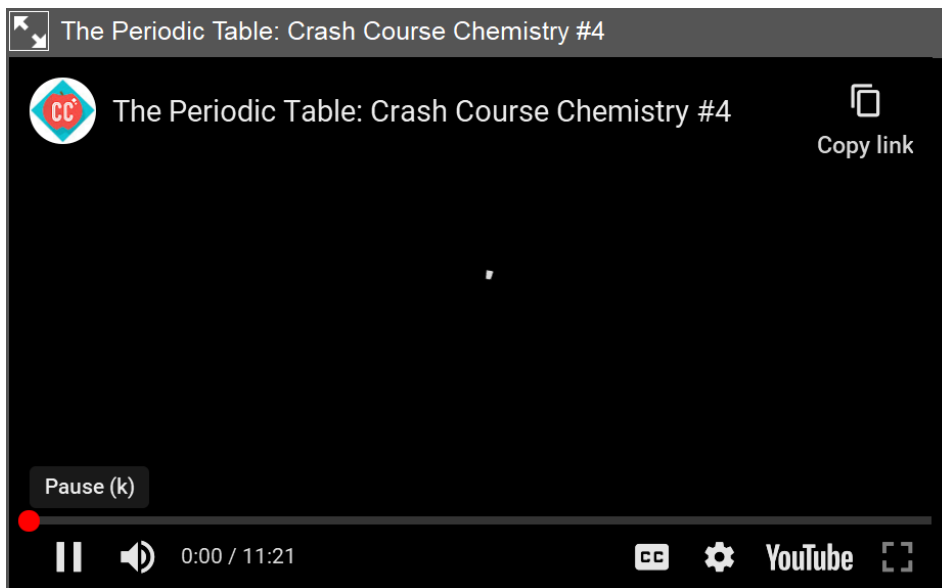
Elements - a substance made of one type of atom.  
(aluminum)

Compounds - a molecule made of 2 or more types of atoms  
(water -  $H_2O$ )

## Elements

- Made of only one type of atom
- 90 naturally occurring elements

### Organizing the Elements - The Periodic Table



Homework:

- Finish and submit the Energy Changes Lab on Teams (due tonight)
- Finish WHMIS training (for those of you who haven't)