

MASS,

***ENERGY* &**

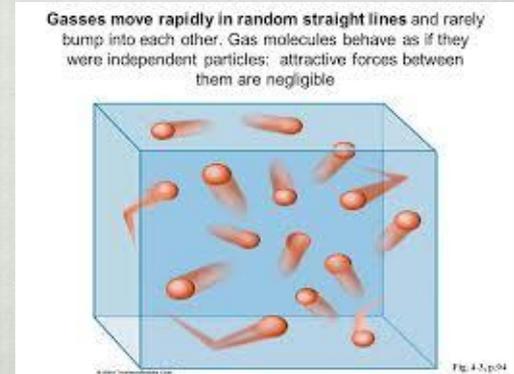
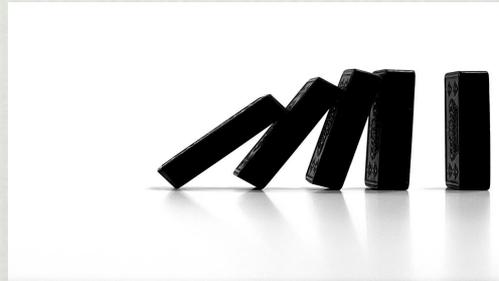
Temperature

Before we talk about **MASS**, *ENERGY* &

Temperature, Let's review what we know about how energy moves from one thing to another.

Energy transfer by moving objects

- Any moving object or molecule transfers (moves) energy.
 - When objects and molecules move, they bump into each other and pass their energy along.



Examples:

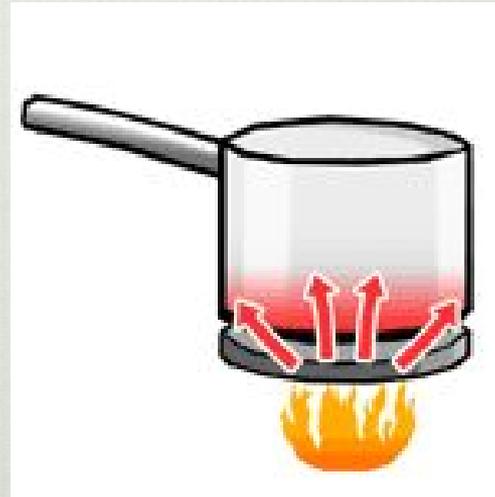
Kicking a soccer ball, dominoes falling,
Molecules bumping into each other

Heat: A form of energy connected with the movement of molecules in any material.

The higher the temperature of a material, the **faster** the molecules are moving, and the **greater** the amount of energy present as heat.

Energy Transfer by Heat Flow

- Heat is energy transferred from one object to another because of a difference in temperature.
- Heat flow is the movement of heat from one object to another.

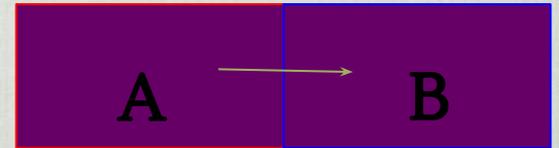
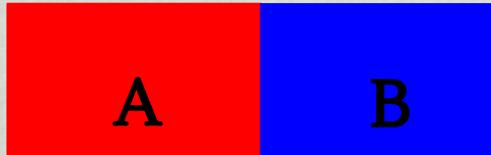


Highlight “heat” and “heat flow” in your notebook.

Energy transfer by heat flow



Heat always flows from the warmer object to the cooler object until they are the same temperature.

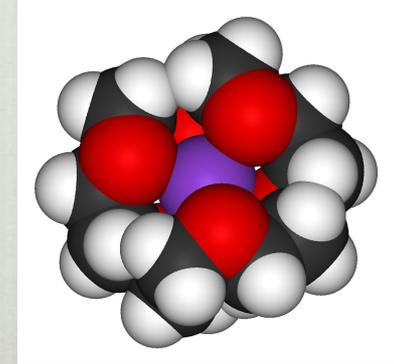
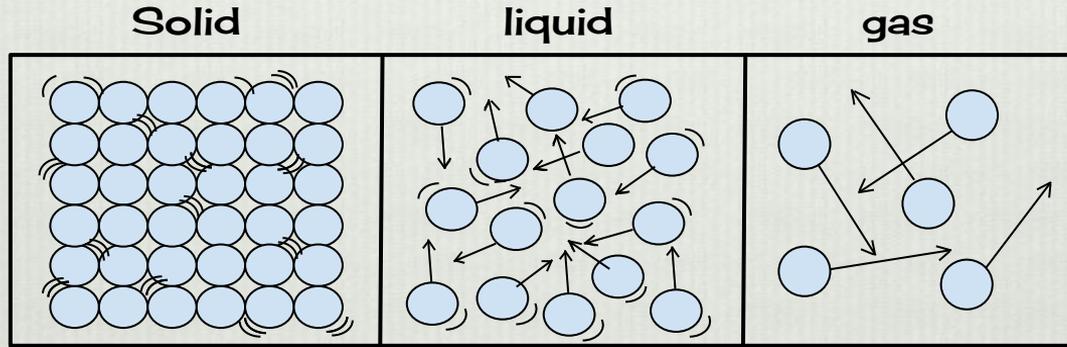


Now that you have been reminded about
heat energy, let's find out about

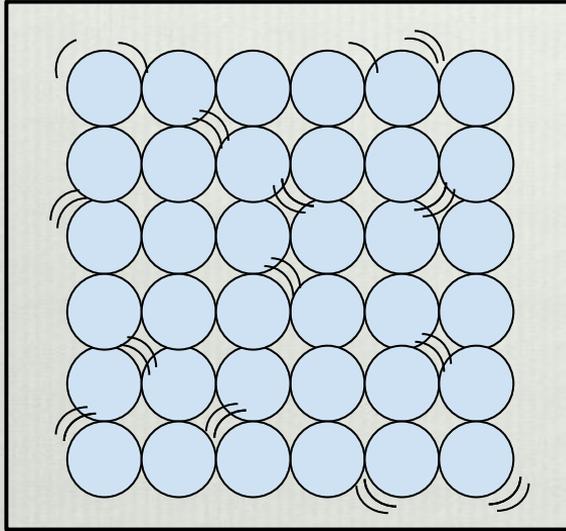
Temperature!!!!

The first word we need to
know is....

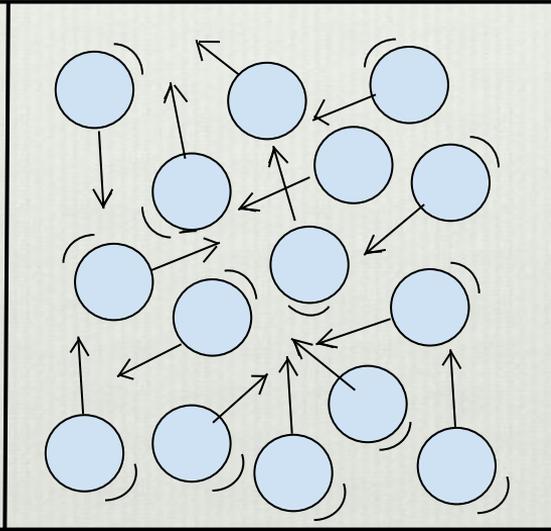
Mass: the amount of particles
(matter) in an object



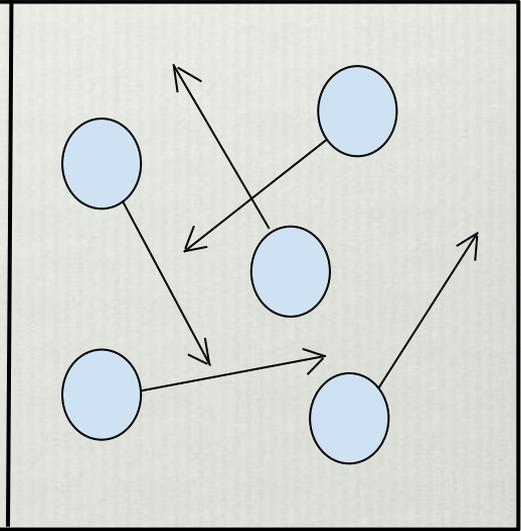
Solid



Liquid

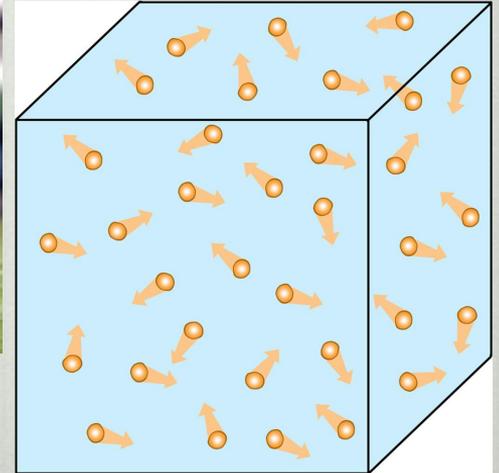


Gas



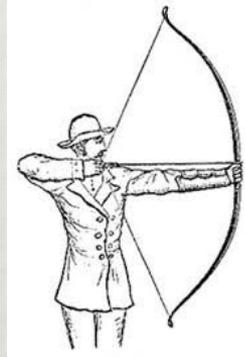
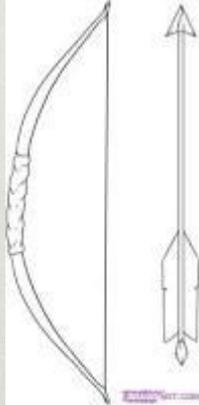
Kinetic Energy:

- ❖ Kinetic energy is energy that results from **movement**.



Potential Energy

- ❖ Potential energy is **stored energy** in an object due to its position.
- ❖ Objects gain potential energy when they are moved from their natural position.



highlight "Potential energy" in your notebook

Example: Bank account \$\$\$Cha-Ching!!!\$\$\$

- If you save money in your bank account, you have stored it and have the **potential** to spend it

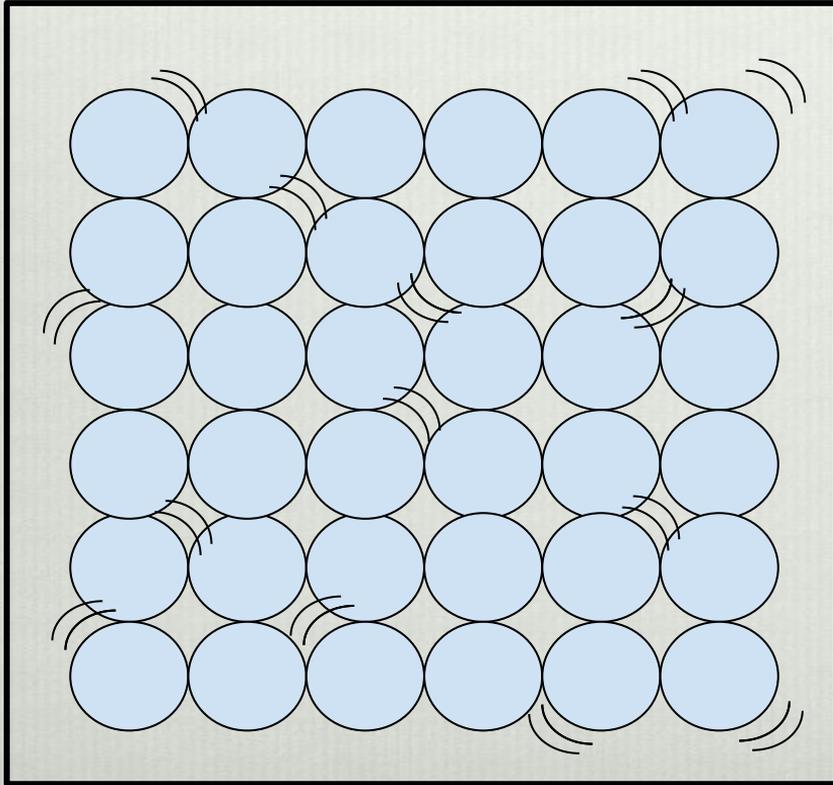


- if you spend the money that is like **kinetic** energy where you use the energy stored.



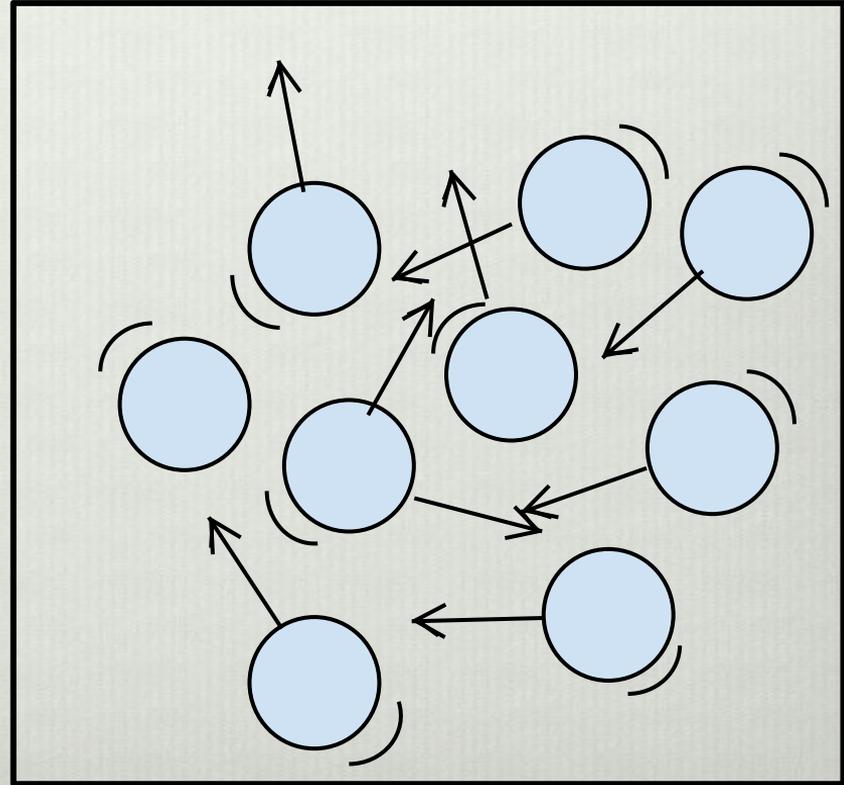
In this amount of space, which has more molecules?

A



or

B

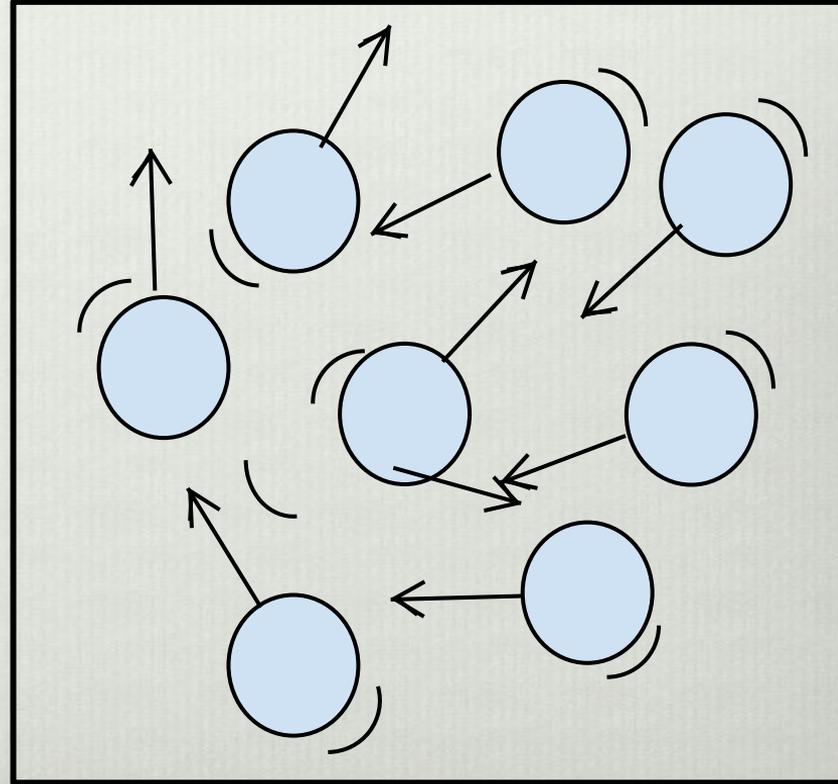
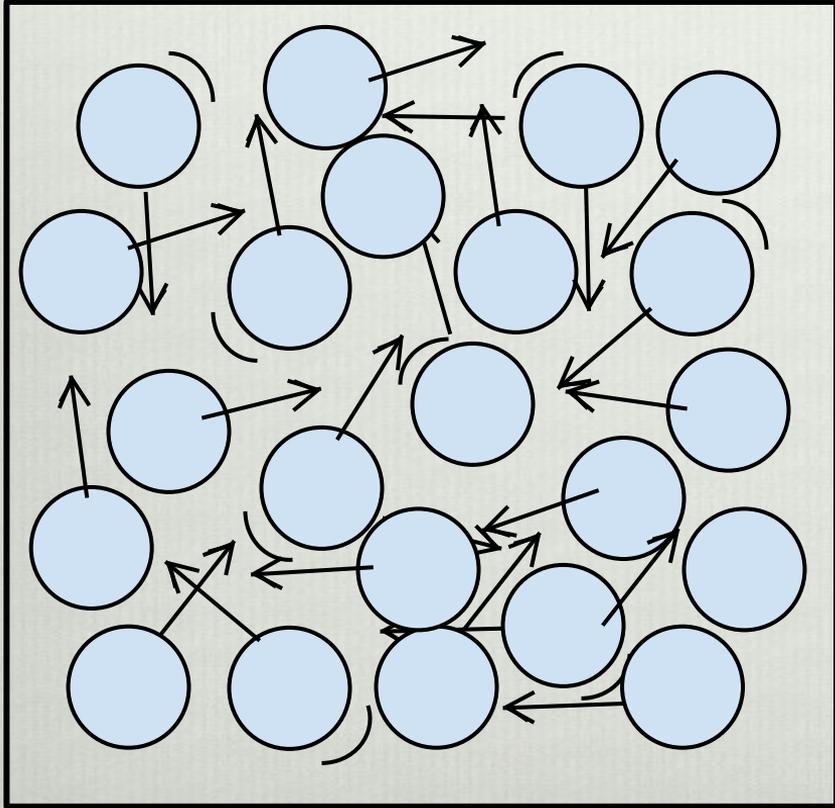


If both **A** & **B** were moving at the same speed, which would have more energy?

A

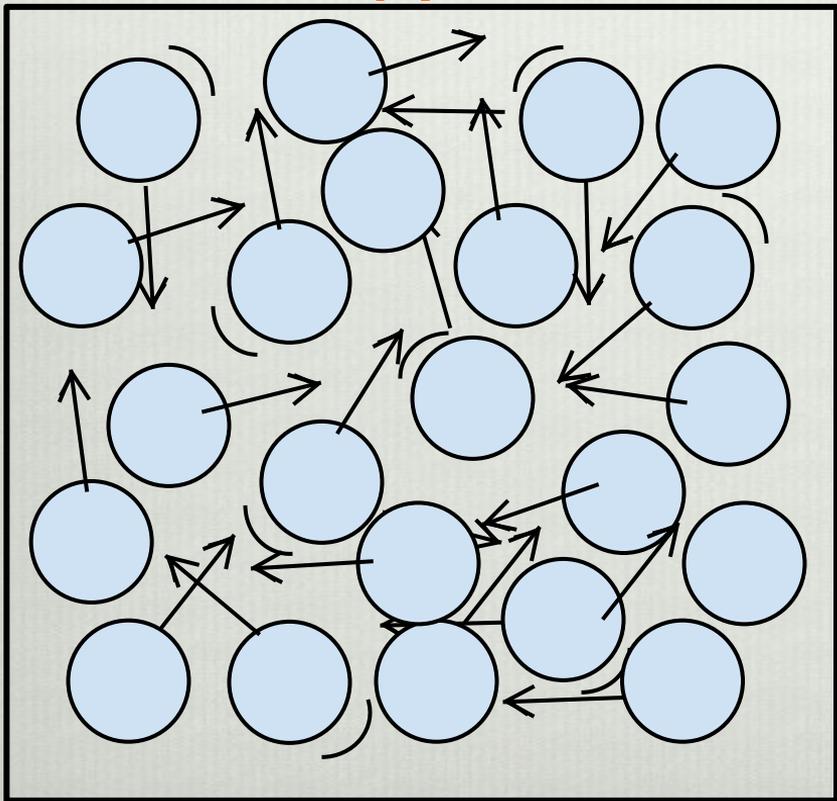
or

B

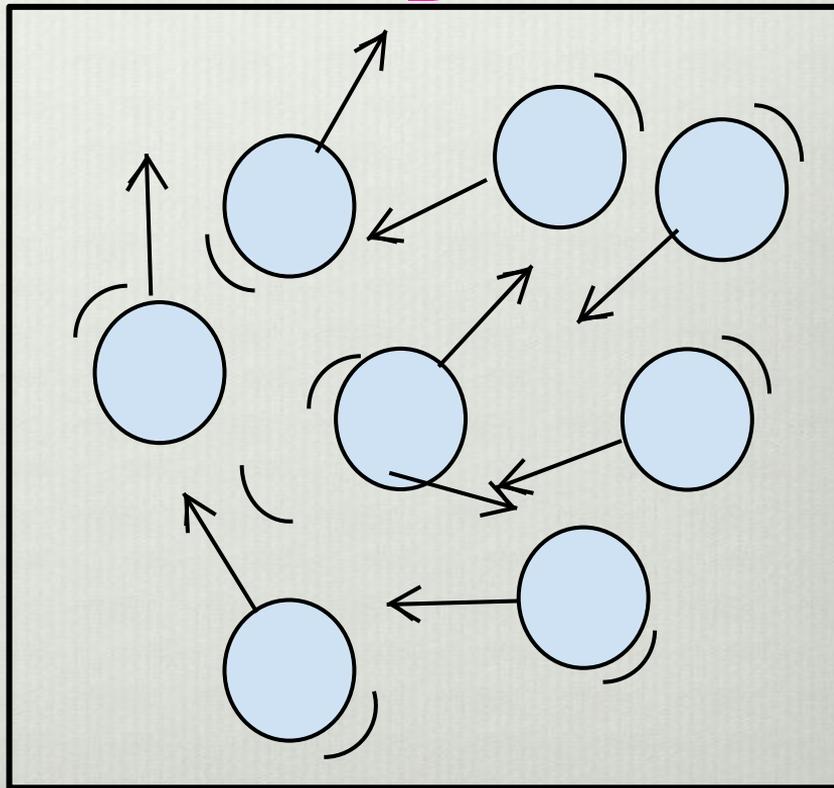


Thats right!!! **A** has more molecules moving,
so **A** has more energy!!!

A



B



Temperature: The average kinetic energy of the moving particles in an object (matter)

Now let's model how
ice makes a drink
cold!!