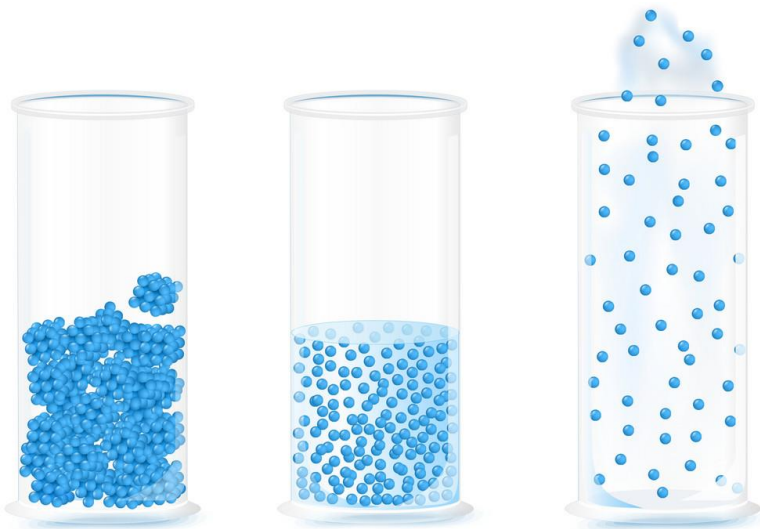


Chemical Energy



Label the different states of the chemical below.

Does it appear to be the same substance throughout the change of state?

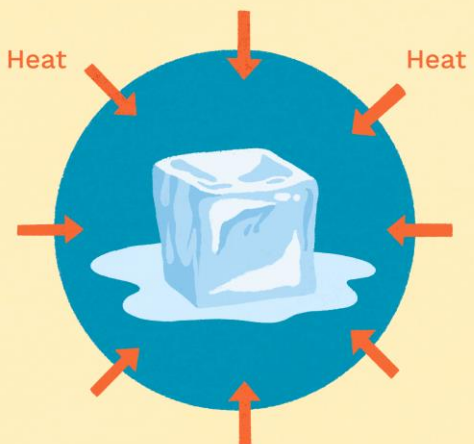
Physical vs Chemical change



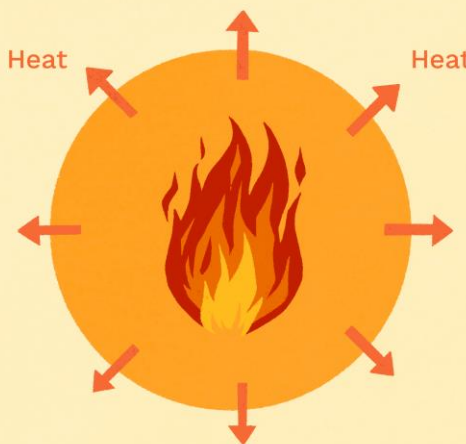
Chemical Energy

Endothermic vs. Exothermic Reactions

Energy is conserved in chemical reactions. The total energy of the system is the same before and after a reaction



Endothermic
The endothermic reaction is cooler than surroundings



Exothermic
The exothermic reaction is hotter than surroundings

oughtCo.

Exothermic reaction:

Vinegar removes the protective iron in the steel exposing the steel to oxygen

Metal + oxygen → what chemical reaction? _____

(Hint: think of an old car that is exposed to rain and oxygen for a long time)

Did the temperature increase or decrease?? _____

Is this the correct trend for an exothermic reaction?? _____

Was this chemical or physical energy?? (Did two or more substance create a new substance?)

Endothermic:

Citric acid in solution	Starting temp (F)	Lowest temp (F)	Time (s)

Remember to add the units to your citric acid measurements!!

Is it teaspoons? Tablespoons? Cups?!?

Is this the correct trend for an endothermic reaction? _____

Elephant toothpaste!! Exothermic or Endothermic?!?