

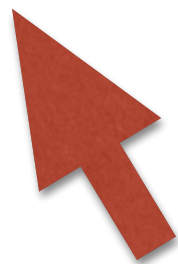
# Energy and Chemical Reactions

# Chemical Reactions

- Chemical reactions are when you break bonds (ionic, covalent, metallic) and create new bonds
- Breaking bonds takes energy and making bonds releases energy



Takes energy  
to start

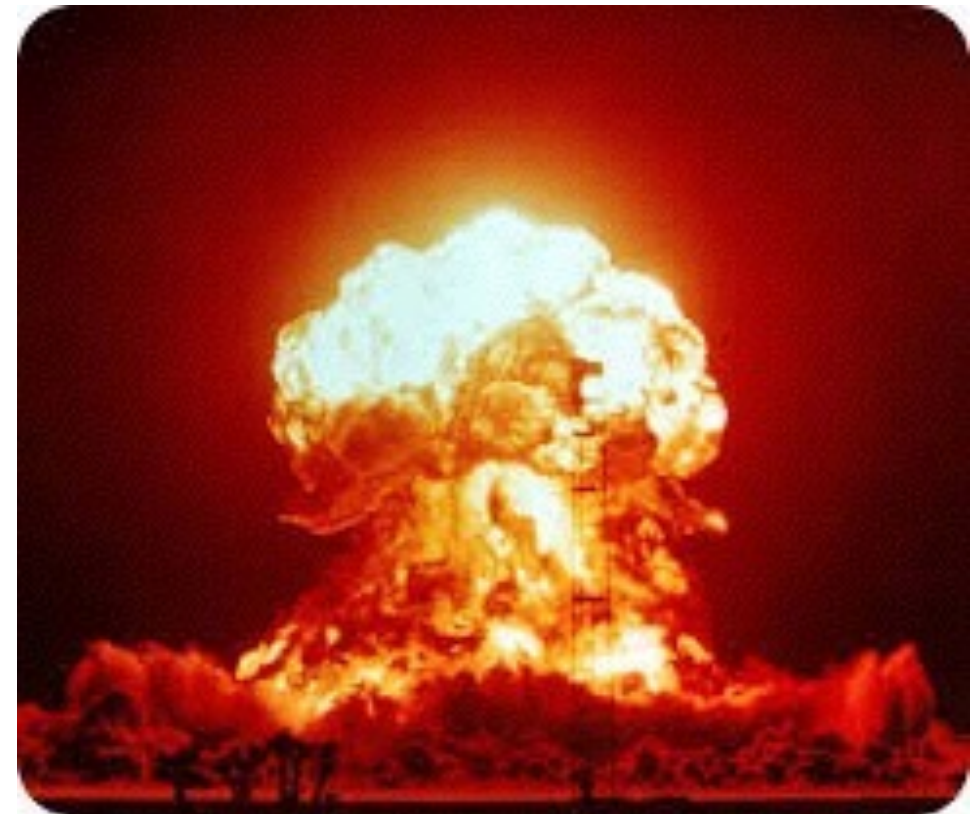


Releases energy  
when done

The question is...  
does the reaction  
take more energy  
or release more energy?

# Exothermic Reactions

- Energy is **released** into the surroundings
- Energy given off at the end is greater than the energy required to start the reaction
- The temperature of the surroundings increases

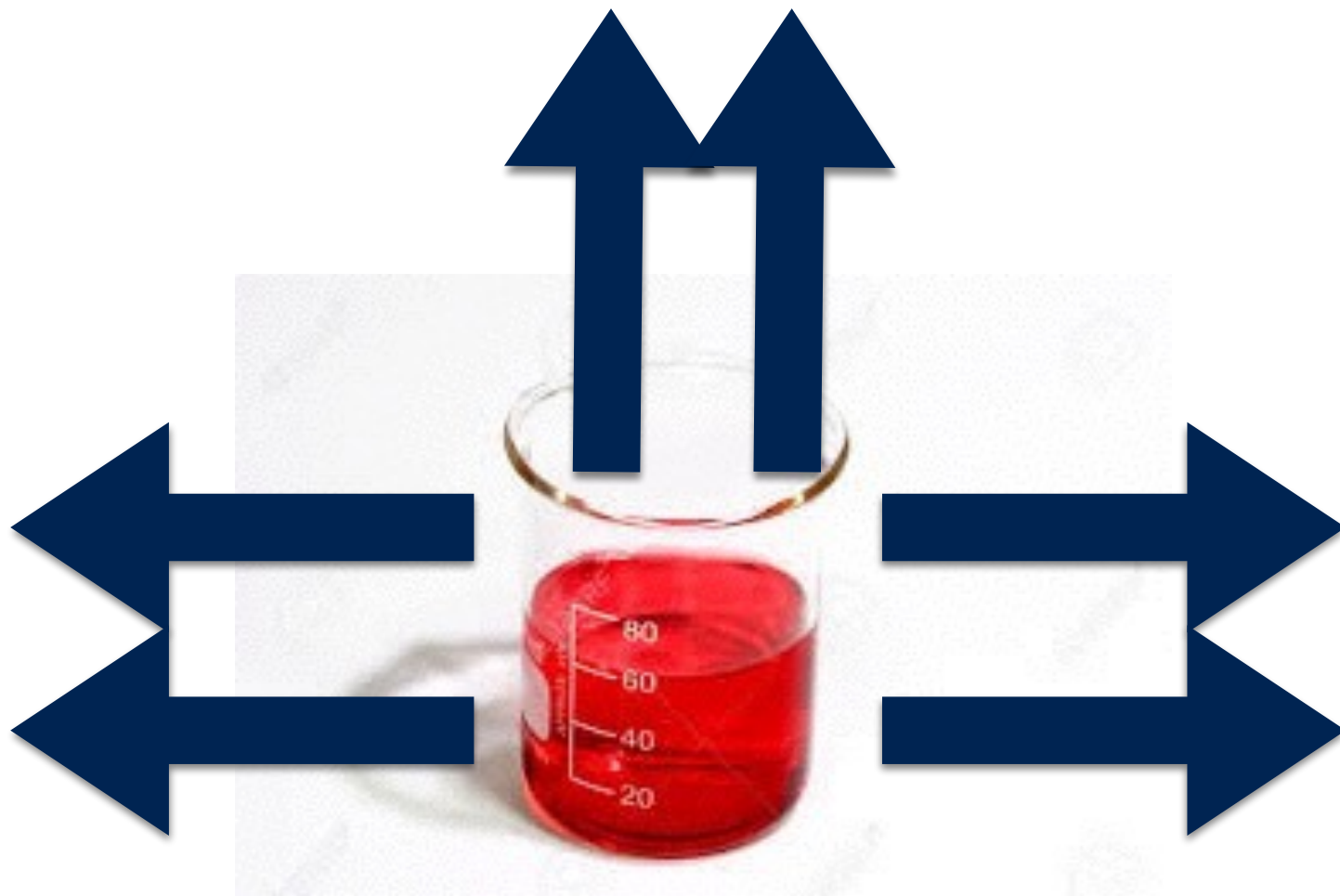


# Endothermic Reactions

- Energy is **absorbed** from the surroundings
- The energy required to make the reaction occur is greater than energy given off when finished
- The temperature of the surroundings goes down



**Exothermic -  
gives off heat  
(feels hot)**



**Endothermic -  
absorbs heat  
(feels cold)**

