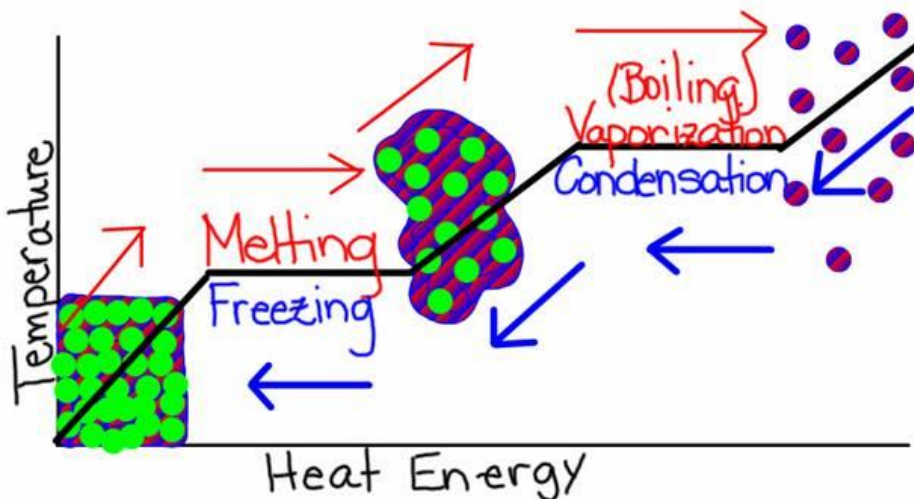


Exothermic and Endothermic Reactions

	Exothermic reactions	Endothermic reactions
Definition	Reaction which releases energy	Reaction which absorbs energy
Energy placed	On product side	On reactant side
Chemical reaction	$\text{CH}_4 + 2 \text{O}_2 \Rightarrow \text{CO}_2 + 2 \text{H}_2\text{O} + \text{energy}$	$2 \text{H}_2\text{O} + \text{energy} \Rightarrow 2 \text{H}_2 + \text{O}_2$
Temperature change	heat energy is released, this means temperature increases and environment is warmer	heat energy is absorbed, to break the bonds, this means temperature decreases and environment is colder
Examples	combustion, rust and neutralization	Boiling and melting



Molecules have more energy as they get warmer. They absorb energy because more energy was needed to break the bonds = endothermic and cooler environment because energy was absorbed



Molecules have less energy as they get colder. They release energy because less energy was needed to break the bonds = exothermic and warmer environment because energy was released.

