

AP Biology Supplemental – Gibbs Free Energy Video Review Sheet

<https://paul-andersen.squarespace.com/gibbs-free-energy>

1. Write the equation for Gibbs Free Energy:
2. Not so much “free” but a _____ energy.
3. Spontaneous reactions: once you give them a little _____ they will _____ on their own.
They tend to _____ energy and give it their surroundings.
 - a. Total Energy (____), which is enthalpy. In biology our energy is in b _____. In a spontaneous reaction it gets smaller or d _____
 - b. Entropy (____) is a measure of the d _____/randomness of a system. In spontaneous reaction, entropy i _____.
 - c. Temperature (T), if we i _____ the temperature the spontaneous reaction is more likely to happen.
4. Applied to Gibb’s Free Energy equation: (*pay attention to $X = Y - AB$*)
 - a. What items make delta G decrease, less than 0 (spontaneous)?
E _____
 - i. A decrease in:
 - ii. An increase in:
 - b. If the delta G is greater than 0, called and E _____ reaction
 - c. If delta G = 0, then in E _____
5. Examples:
 - a. Cellular Respiration – what type of reaction?and how much energy?
 - b. Why doesn’t sugar just explode on our countertops?
 - c. Photosynthesis – what type of reaction?how much energy?
 - d. Where does the activation energy come from for photosynthesis?
 - e. Day to day, we use _____, it is our energy coinage, we can s _____ it and then cash it in.
 - f. What is the delta G value for breaking ATP down into ADP?

Review Sheet for AP Biology Supplemental – Gibbs Free Energy

Contributed by Winnie Litten — YouTube - /mslittenbiology Twitter-@mslittenbiology