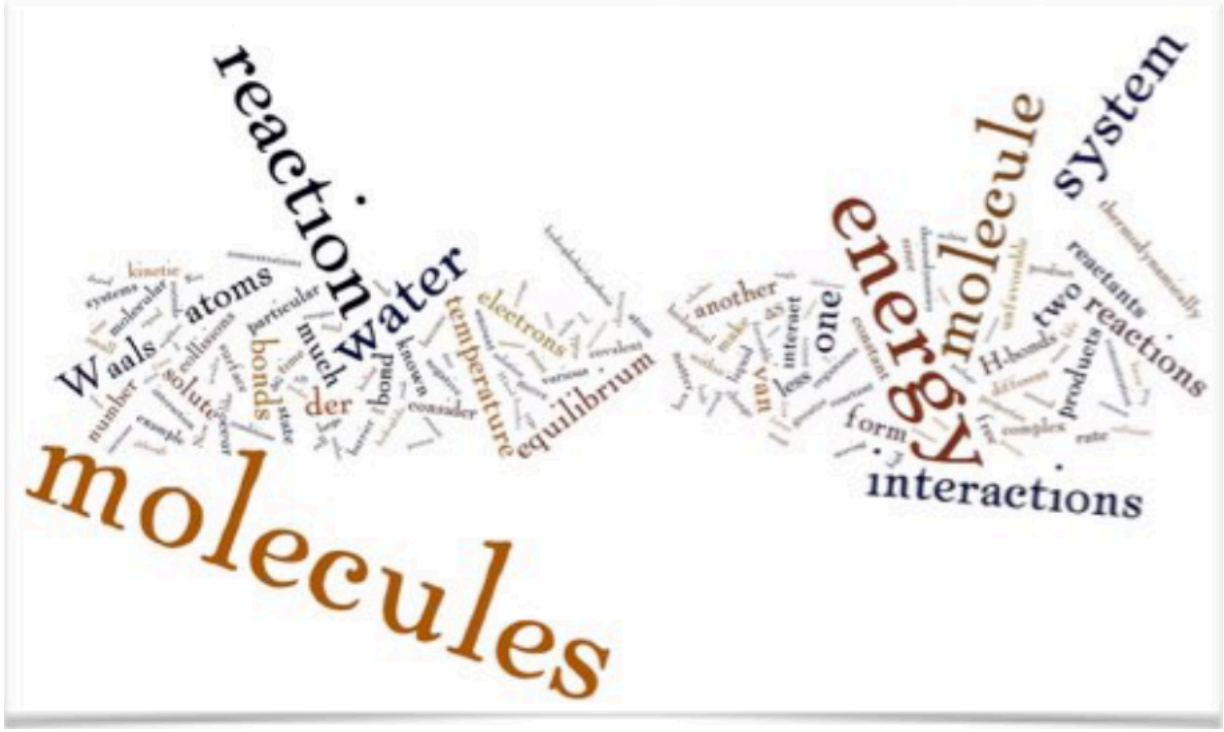


Molecular interactions, thermodynamics & reaction coupling

course web site

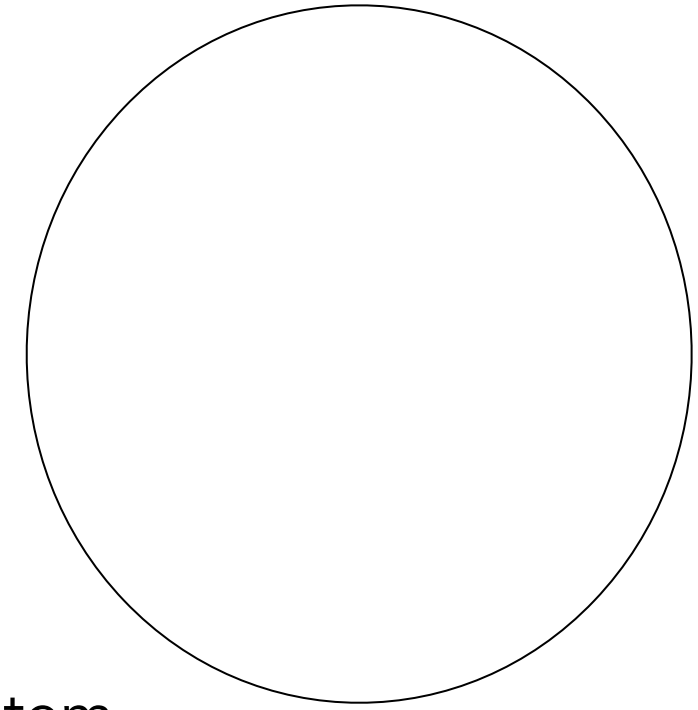
group: what are core ideas in today's reading…

A. explain, what factors influence the equilibrium state of a reaction.

why is entropy higher in a gas than in a solid

B. explain, in terms of energies and probabilities, what factors influence the rate of a reaction.

Consider a system with a barrier



Concentration of A [A] is higher
outside than inside.

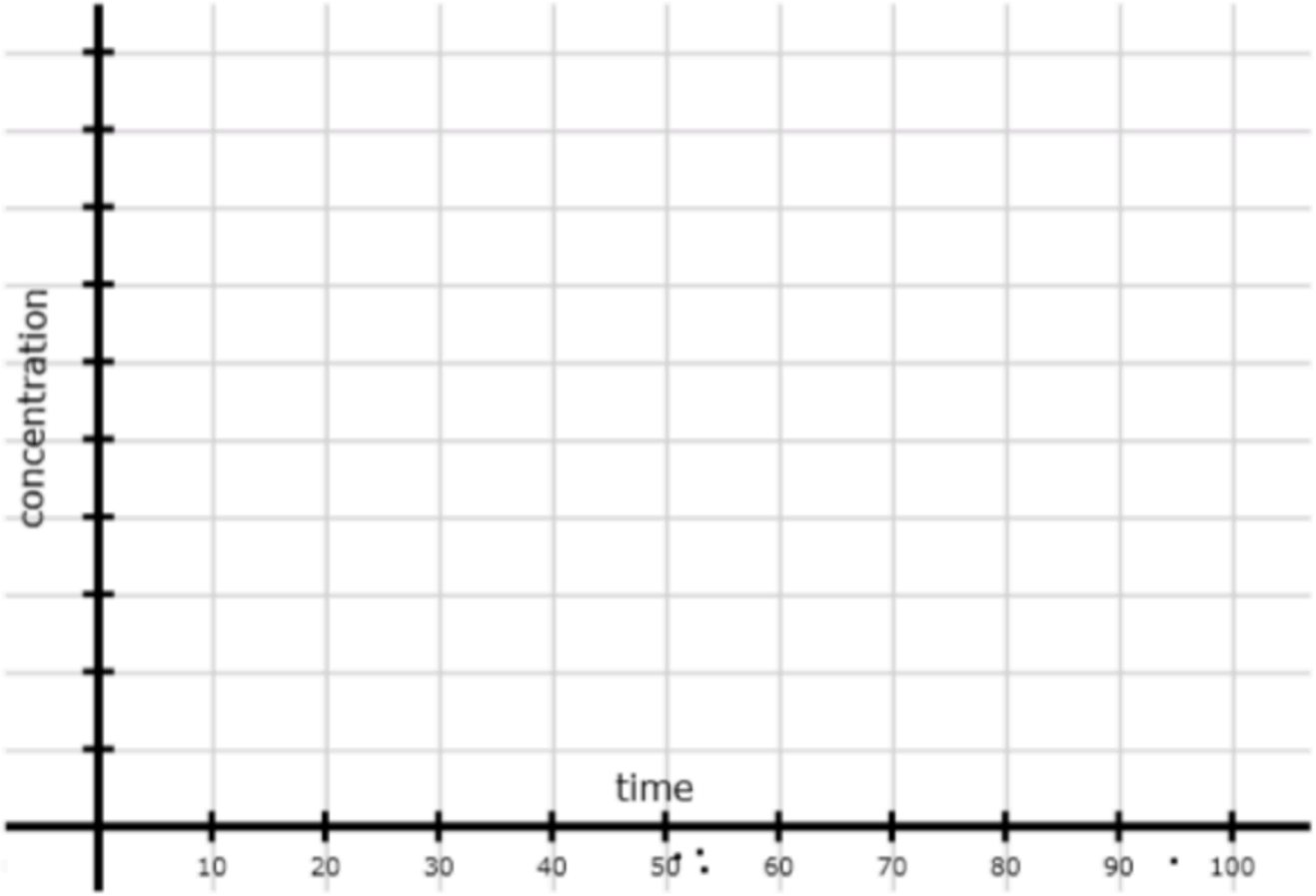
Draw the reaction diagram for the system
(what factors are you considering in your drawing?)

Q: What is involved in coupling reactions?

how can you recognize a coupled (or an uncoupled) reaction system?

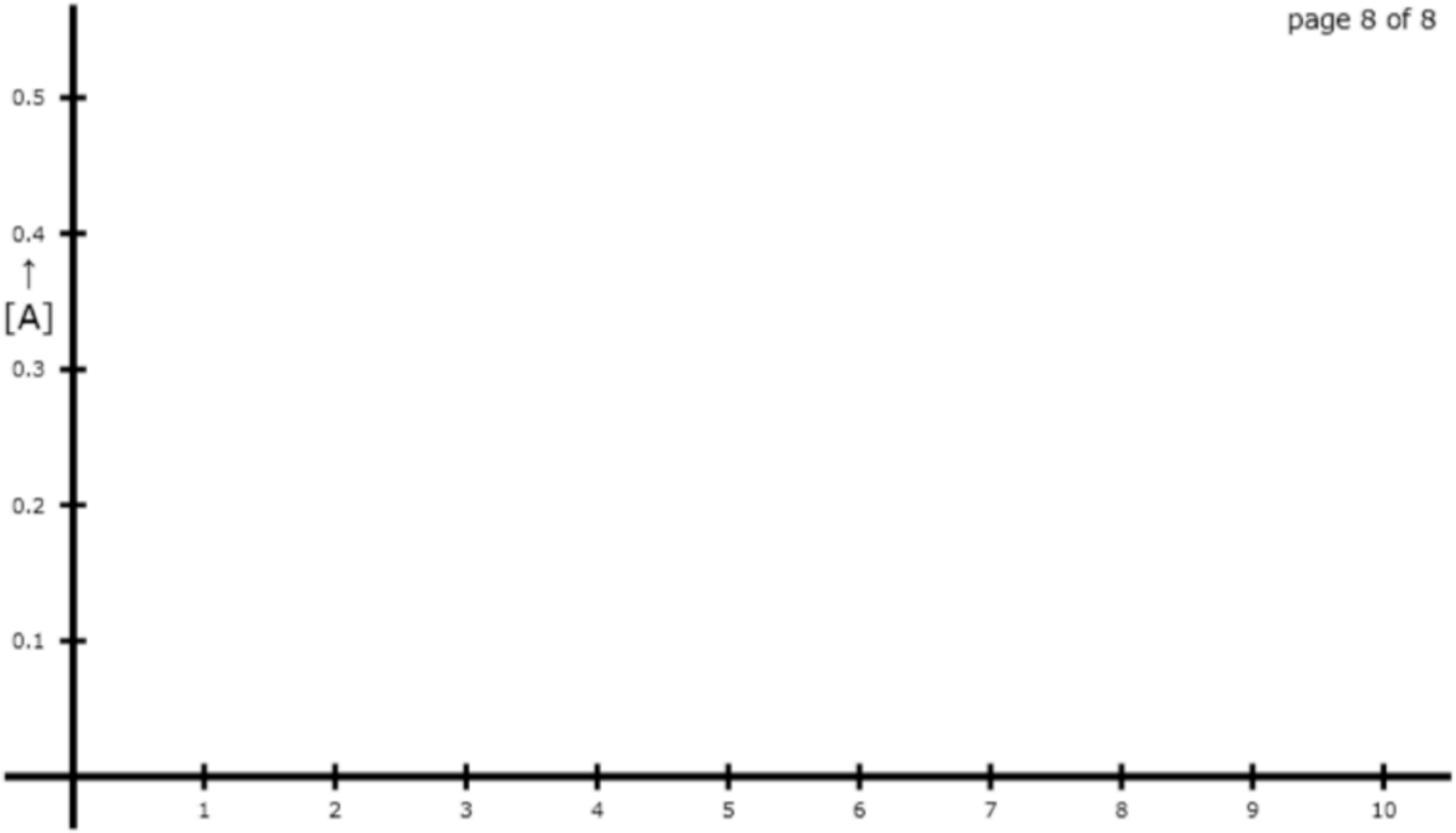
What is LeChatelier's principle and how is it involved in reaction coupling?

Consider a thermodynamically favorable reaction with a high activation energy. Make & justify a prediction as to the behavior of the products over time.



Draw | Adjust | Erase | Reset

In addition to the A ↔ B + C reaction, there is a second reaction C +E ↔ F that is **thermodynamically highly favorable** AND quickly reaches equilibrium.
At time t=5 the system is made 1M in E. **Graph what happens to [A]** from t=0 to t=20



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What is involved in coupling reactions? how do you recognize a coupled reaction system?

What is LeChatelier's principle and how is it involved in reaction coupling?

Why do all atoms / molecules attract one another?

Why do they not fuse with one another?

How does the shape of a molecule influence the interactions between molecules?

Monday 9 Oct	Chapter 5.3 Biological Thermodynamics	119-125	**Complete** beSocratic #15