



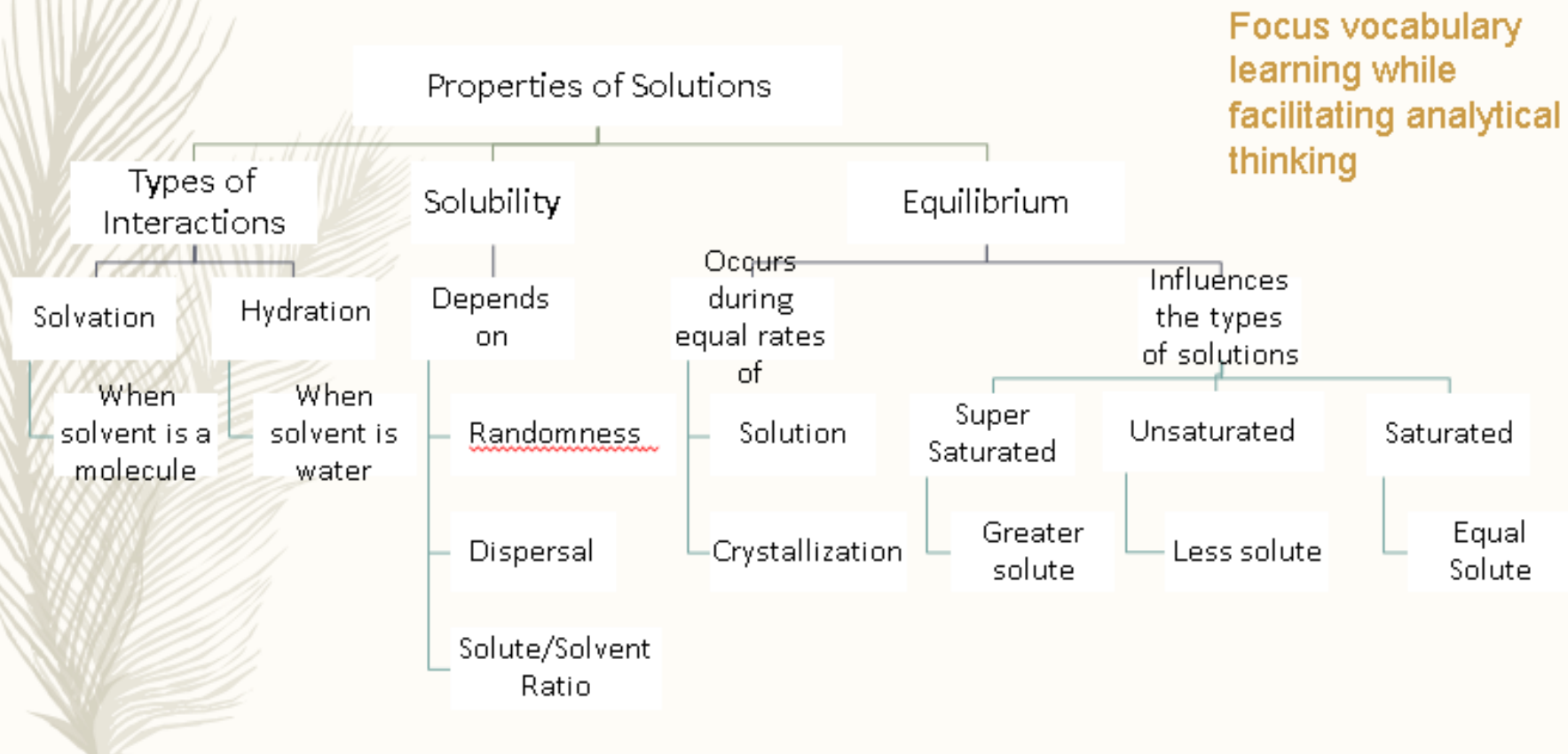
# **How to Prepare for Midterms: 5 Techniques**

## Technique 1: Create a hierarchy

- Outline a chapter of your textbook to show headings & sub-headings
  - This is best done before class as a form of preview
  - **Leave blank space** so you can add additional detail after class lecture
  - Outline the entire chapter using bold headings & subheadings
  - Outline particular sections in detail
    - See example in following slides

# Distributed Practice with Analysis—Outline to visualize structure of chapter

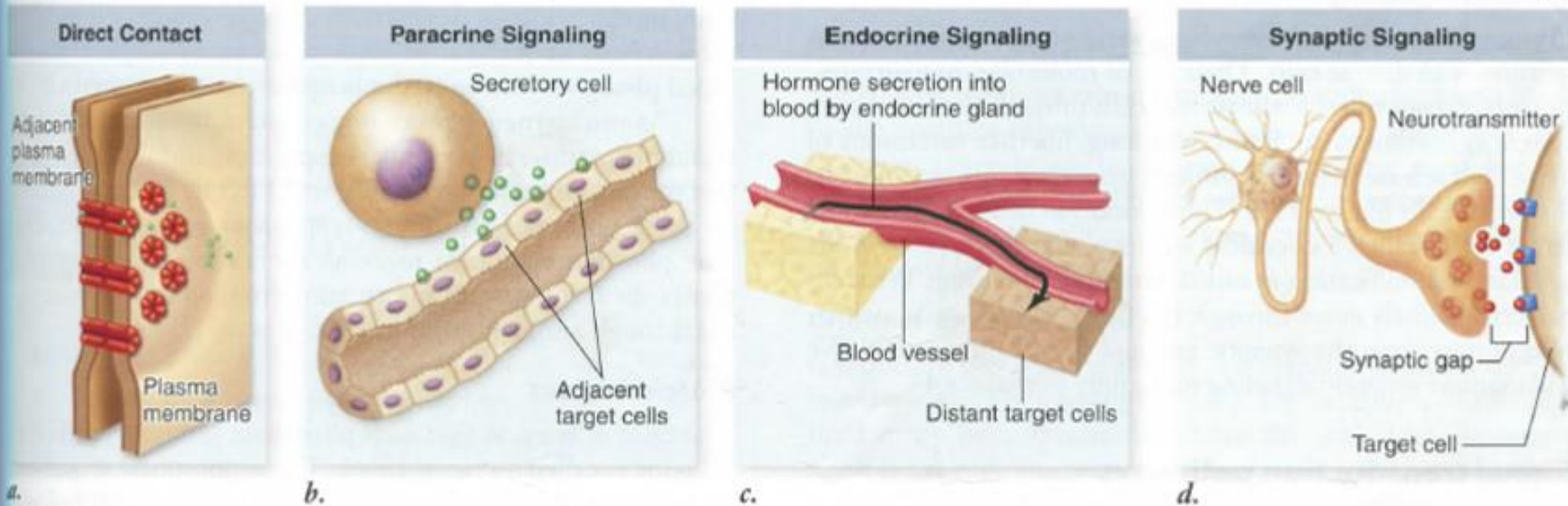
## Example: Chemistry Concept Map:



Just use the headings & subheadings to create a visual that shows the organization of the material

# Use definition templates to outline text content

Try it!



**Figure 9.2 Four kinds of cell signaling.** Cells communicate in several ways. *a.* Two cells in direct contact with each other may send signals across gap junctions. *b.* In paracrine signaling, secretions from one cell have an effect only on cells in the immediate area. *c.* In endocrine signaling, hormones are released into the organism's circulatory system, which carries them to the target cells. *d.* Chemical synapse signaling involves transmission of signal molecules, called neurotransmitters, from a neuron over a small synaptic gap to the target cell.

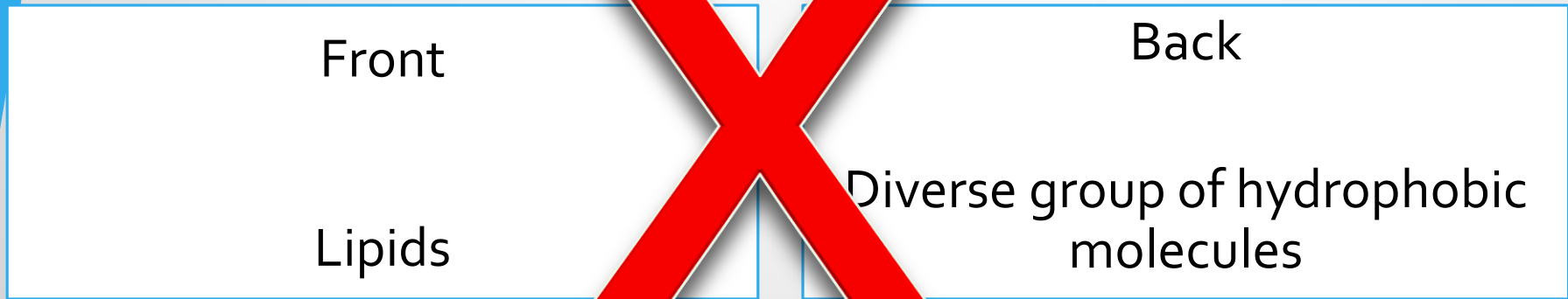
Term + Class + Distinguishing characteristics

Raven, et. al. 2008

Direct contact is a kind of cell signaling in which.....

# Think Deeply!

## Using Note Cards Correctly



Too general !!!

# Using Note Cards Correctly

Come up with concise and challenging questions.

Front

Describe (4) General  
Characteristics of Lipids

Back

1. Not true polymers
  1. Doesn't have repeating monomers
2. Hydrophobic
  1. Regions of hydrocarbons
3. Varied in form and function.
4. Most important types are: Fats, Phospholipids and Steroids

Practice!

Technique 2: Choose 1 concept and complete as many thinking levels as possible

## Example: Historical Events

	Monroe Doctrine
What is it?	
When did this happen? (what was important during this time period)	
Who was involved?	
Why did this happen? (context)	
Significance (social, economic, or political impact)	

## Technique 2: Choose 1 concept and complete as many thinking levels as possible

Questions to ask (and answer!)	Level of Thinking
What is _____? What is the formula for _____? What do all the symbols in the formula mean? What is the sequence of the reaction?	Memorize
Why is <u>(_____ this process _____)</u> important? When do we use <u>(_____ this formula _____)</u> ? What is happening in each step?	Understand
How do I apply <u>(_____ this formula / this law _____)</u> ? (step-by-step)	Apply (Practice, Practice, Practice!)
What do I expect to happen if <b>X</b> (part of the formula or process) increases / decreases / doesn't work?  How is _____ different from / similar to other processes / formulas?	Analyze (connect parts to whole)  Distinguish (Compare/Contrast)
Which formula should I use in a particular situation (for a given problem)?	Evaluate / Decide / Choose



## Technique 3: Task Analysis –Applying Formulas

- Process by which a task is broken down into its component parts
  - Word problems ( Applied Math → Business, Science, etc. )
1. Read the problem aloud
  2. Read the problem again, highlighting key terms (“signals”)
  3. What facts do you have? What do you need to find? Have you seen a similar problem? (check notes & text)
  4. Identify the formula needed to solve the problem and write it below the problem
  5. Solve the problem (step-by-step)
  6. Check your answer
- Repeat this process with each type of application problem you are learning in class

# Technique 4: Create Comparison Charts

- Biology Example :

**Learning Goal = to understand carbon fixation (how types are alike & different)**

	C <sub>3</sub>	C <sub>4</sub>	CAM
Environment			
Type of plant			
How process works			
Chemical reaction(s) involved			
Distinctive features / key terms			
Advantages (how does the plant benefit from using this process? In terms of energy, efficiency, etc.)			
Disadvantages (how does using this process limit the plant? In terms of energy, efficiency, etc.)			

# How To Create a Comparison Chart:

- Skim notes & text for concepts to compare
- Skim again & make a list of comparison characteristics
- Draw a table outline (in this example, we are comparing 3 types of carbon fixation and seven characteristics (or questions))
- Fill in the columns, using text & lecture notes
- Test your understanding by covering up different rows or columns of content & trying to recite the information without looking at it.

# Technique #5: Ask & Answer questions

- Write down & answer all the review questions in your book
  - If questions aren't given, turn **headings** into questions, For example:
    - **Distortions in Eye witness testimony**
      - What are distortions in eye witness testimony?
      - Why do they happen?
      - What are some examples?
    - **The Council of Nicea: Responding to Heresy**
      - What was the heresy?
      - What was the response?
    - **Three types of Long-Run Supply Curves**
      - What are the three types?
      - How are they similar/different?

## **NOW YOU TRY IT! :**

- Choose one of the 5 techniques I just showed you
- Apply it to one of your courses
- Tutors can help!
- Bring your organizer with you to meetings with your faculty member (or tutor) to see if you are collecting the correct information at the correct “depth”.

# Effective Metacognitive Strategies

- Use the Study Cycle with Intense Study Sessions
- Spend *some* time on every subject every day
- Aim for 100% mastery, not 90%!
- Memorize everything you're told to memorize (definitions, formulas, etc.)
- Always ask why, how, and what if questions
- Always solve problems without looking at an example or the solution
- Test understanding by giving "mini lectures" on concepts (form study groups to do this!)
- Visit the ARC on a regular basis

# So, What Can You Do, Starting Now, to Pursue Your 4.0 this semester?

- Spend more time studying  
(at least 2 hours/week for every hour in class)
- Aim for higher learning levels and 100% understanding
- Use office hours and study groups productively
- Use the Study Cycle  
with Intense Study Sessions
- Use Metacognition to Study Smarter!!!

# Final Note

After trying these techniques on your own, please visit the Ohio Dominican Academic Resource Center. You WILL benefit most from these services if you come prepared!

Also visit [www.ohiodominican.edu/arc](http://www.ohiodominican.edu/arc) for on-line resources and information that will teach you more effective study strategies.

I wish you a fantastically successful future!

**Questions?**

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