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G.P.S. Guidance for Building Community and Motivating Students

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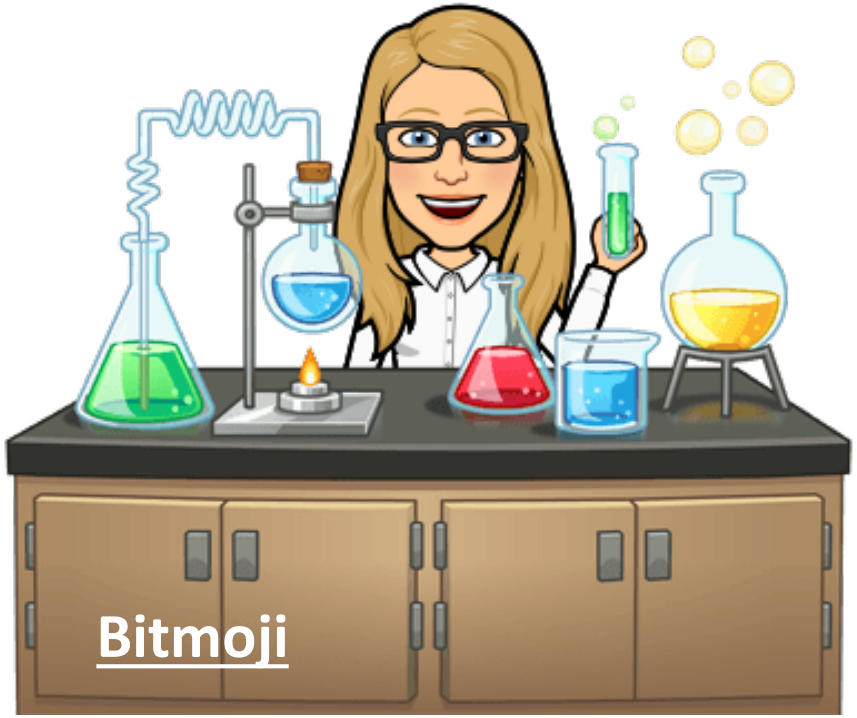
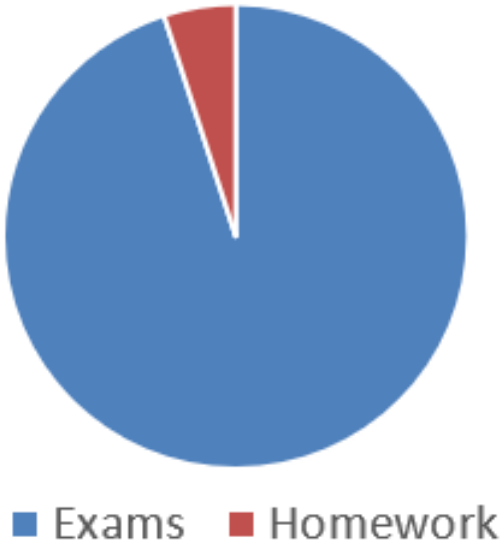
BCCE 2022



Remote Teaching → Course Redesign

To Reduce Cheating, *Minimize High-Stakes Exams*

- Pre-pandemic grading:
  95% exams, 5% homework
- Major redesign needed!



Chap. 1, 2, 3	Exam I	100 pts (20%)	Thursday, February 14 (50 min. during class time)
Chap. 4, 5, 15	Exam II	100 pts (20%)	Thursday, March 14 (50 min. during class time)
Chapters 6, 7	Exam III	100 pts (20%)	Thursday, April 18 (50 min. during class time)
Chapters 1-11	Final Exam	200 pts (40%)	Tue, 5/14 or Thu, 5/16 (see schedule for times)

Remote Teaching → Course Redesign

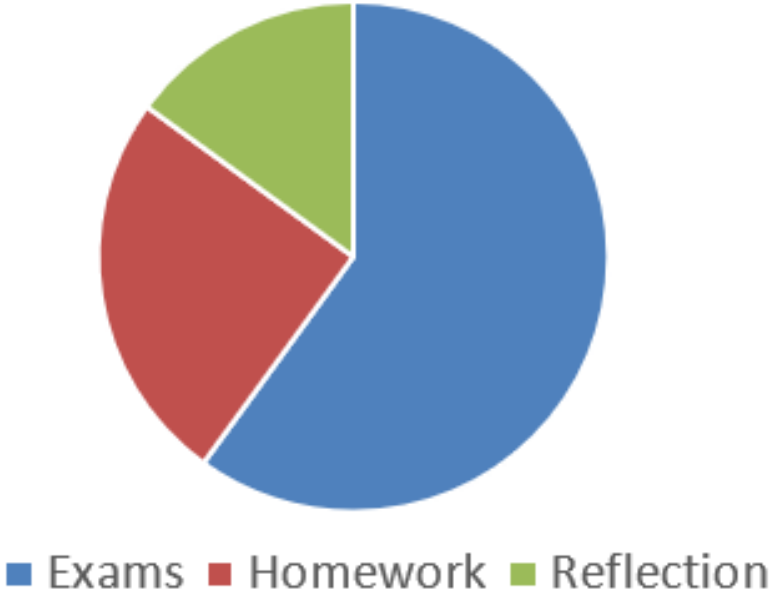
New Grading Scheme

- 60% exams, lower-stakes final & lowest midterm is dropped
- 25% homework (WileyPLUS & “free red ink” assignments)
- 15% reflection (study groups, exam wrappers, writing prompts)

How will your learning be measured?

Course grades are based on textbook-based homework (EOC), occasional quizzes, brief weekly assignments, three written midterm exams, and a final exam. I am planning on proctoring the written exams synchronously via Zoom, but please let me know if you need to adjust your time slot. *Each exam i cumulative but will emphasize the immediately preceding chapters.* Exams must be taken as scheduled an NO make-up exams will be given, but **the lowest midterm grade will be dropped**. If more than one midterm is missed, a grade of zero will be assigned for the missing midterm exam(s).

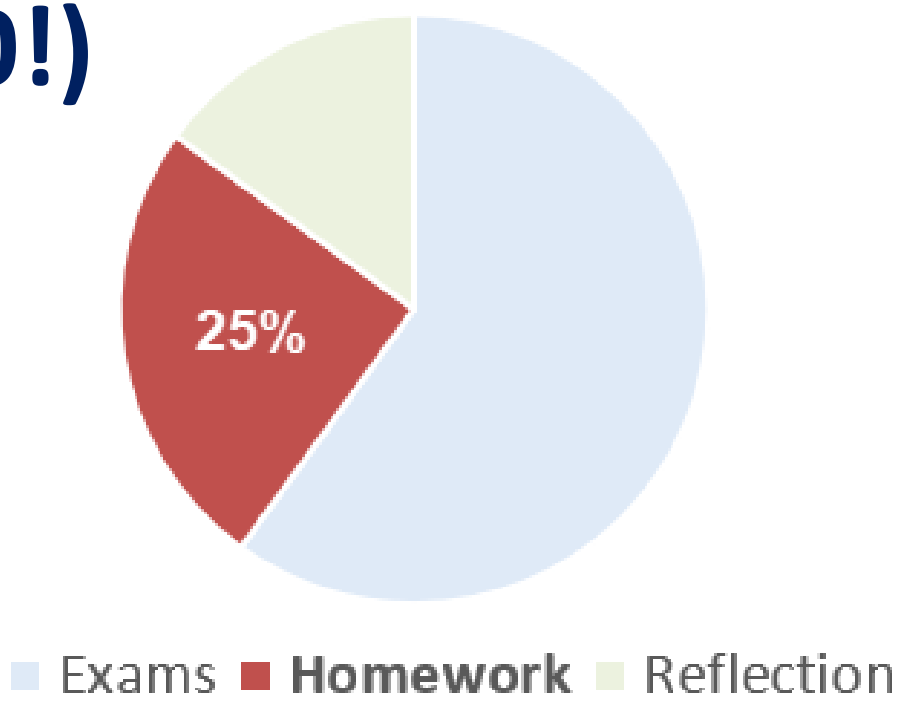
Homework problems		125 pts	(25%)	End-of-Chapter (EOC) problems/WileyPLUS/Quiz
Weekly study/reflection		75 pts	(15%)	Friday Fives, OLC Study Group, Exam Wrapper…
Ch. 1, 2, 3	Exam I	100 pts	(40%)	Thursday, 2/18 (60 min. during class time)
Ch. 4, 5, 15	Exam II	100 pts		Thursday, 3/18 (60 min. during class time)
Ch. 6, 7	Exam III	100 pts		Thursday, 4/22 (60 min. during class time)
Ch. 1-11	Final Exam	100 pts	(20%)	Tuesday 5/18 (see schedule for times)



Goal: ENGAGE and MOTIVATE students!

Online Homework = Formative Assessment

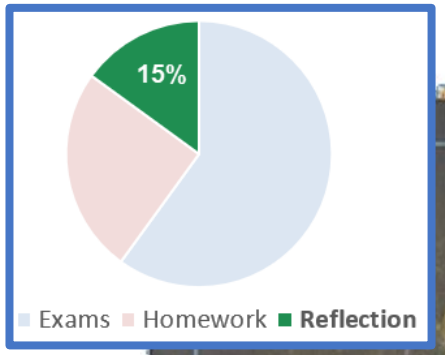
25% Homework: Klein SkillBuilders and/or End-of-Chapter Problems (>5,000!)



- If you value it, assign points to it! *(…and then **students value it**!)*
- Encourages self-assessment and use of Solutions Manual
- Interaction and engagement with e-text/resources, auto-grading = 24/7 feedback

Keeping Students Motivated

15% of grade:
study groups and weekly "Friday5" reflection



<u>Motivate Lab</u> training (GPS)

- ✓ **G**rowth Mindset
- ✓ **P**urpose & Relevance
- ✓ **S**ense of Belonging

Dustin Thoman
dthoman@sdsu.edu

GPS: Encouraging a Growth Mindset

- Value formative assessment (points for textbook problems!)
- Drop lowest exam
- Discuss study strategies
- Discuss neuroplasticity, etc.
- Share your own stories (struggles/growth)
- Provide metacognitive exercises
  - Exam Wrappers, weekly study plans

resources

Fostering Metacognitive Reflection

Exam Wrappers

- Survey given after each midterm exam
- Students reflect on…
  - ✓ how they prepared
  - ✓ what mistakes they made
  - ✓ how they will prepare differently next time
- Course credit earned by submitting wrapper + exam corrections (4 points each)

Metacognitive Reflection: Exam Wrapper

CHM 3140 Exam Wrapper - Post-Test Survey Name:_____

Metacognition By taking a step back and thinking about the way you learn, you can improve your learning! The following survey will guide you through an exercise in self-reflection, with the goal of improving your performance on the next exam. You will earn 4 points credit if you complete this survey, and 4 points for corrections (*include written reflection, if score <50). It analyzes the following three areas

1. How did you prepare for this exam?
2. What kinds of mistakes did you make?
3. How will you prepare differently next time?

** If exam score is below 50, you must submit a written reflection with your exam corrections (what will you do differently for the rest of the semester?)*

What was your score* on the exam? ☐

What was your grade in CHM 1220? ☐ Are you repeating CHM 3140? Y / N

1. Leading up to the exam, approximately how many hours per week outside of class (on average) did you spend studying Organic Chemistry? ☐

2. Given the number of textbook problems in each chapter (#), about how many did you work on?

Ch. 1 (# problems) **(Lewis, hybridization, bp)**		**Ch. 2** (# problems) **(Resonance)**		**Ch. 3** (# problems) **(Acid/Base)**	
10 SkillBuilders (**34**)		10 SkillBuilders (**33**)		11 SkillBuilders (**33**)	
End-of-Chapter (EOC) (**47**)		EOC (**51**)		EOC (**40**)	

Metacognitive Reflection: Exam Wrapper

3. Approximately how much of your studying was spent doing each of the following activities?

5	4	3	2	1
major contributor	moderate amount	some time spent	minimal amount	not done at all

___Reading textbook section(s) for the first time

___Rereading textbook section(s)

___Working on/reviewing submitted homework assignments

___Solving textbook problems for practice

___Working on online homework (e.g., Sapling)

___Writing/using flash cards

___Writing key concept or chapter summaries

___Reviewing sample exams

___Working on sample exams

___Reviewing/rewriting your own notes

___Reviewing materials from course website

___Working with a study group (OLC)

Of the ab

4. How often did above activities involve you providing **evidence of your learning**? (writing answers down)

☐ almost all the time ☐ often/almost daily ☐ regularly (not daily) ☐ occasionally ☐ rarely

5. Do you agree or disagree with the following statement: I felt prepared when I walked into the exam.

☐ strongly agree ☐ agree ☐ somewhat agree ☐ disagree ☐ strongly disagree

6. Do you feel you spent enough time studying for the exam? If not, please mark all your reason(s).

☐ I dedicated enough time to study ☐ I underestimated the time needed

☐ I fell behind the lecture pace and ran out of time for latest material

☐ Additional midterms/assignments in other classes ☐ I had health issues

☐ Other commitments kept me from needed studying (work/family/etc.)

Metacognitive Reflection: Exam Wrapper

8. Now that you have looked over your graded exam, estimate the percentage of points you lost due to each of the following.

___Trouble understanding a concept
___Trouble remembering nomenclature
___Trouble with definitions
___Trouble with technique
___Not concentrating/focused enough
___Careless mistakes
___Didn't know how to approach the problem
___Lack of preparation
___Unclear expectations
___Reviewed the wrong material
___Not practicing enough
___Anxiety (and specifically over what?)

9. For each page of the exam, place a check mark for each reason that fits any missed question on that page. Total the checks in each row. Look at the reasons with the highest totals and decide what you can do to get a better test score next time.

Incorrect response(s) on each page, and reason(s) for mistakes (mark all that apply)

p. 2	p. 3	p. 4	p. 5	p. 6	Total	
						The information was not in my notes, or my notes were incomplete.
						I studied this, but couldn't remember all the details, or how to apply it.
						I did not work enough problems on this topic. (lack of preparation)
						I misread or did not follow the directions.
						I wrote poorly organized or incomplete responses.
						I made a careless mistake.
						I ran out of time.

Metacognitive Reflection: Exam Wrapper

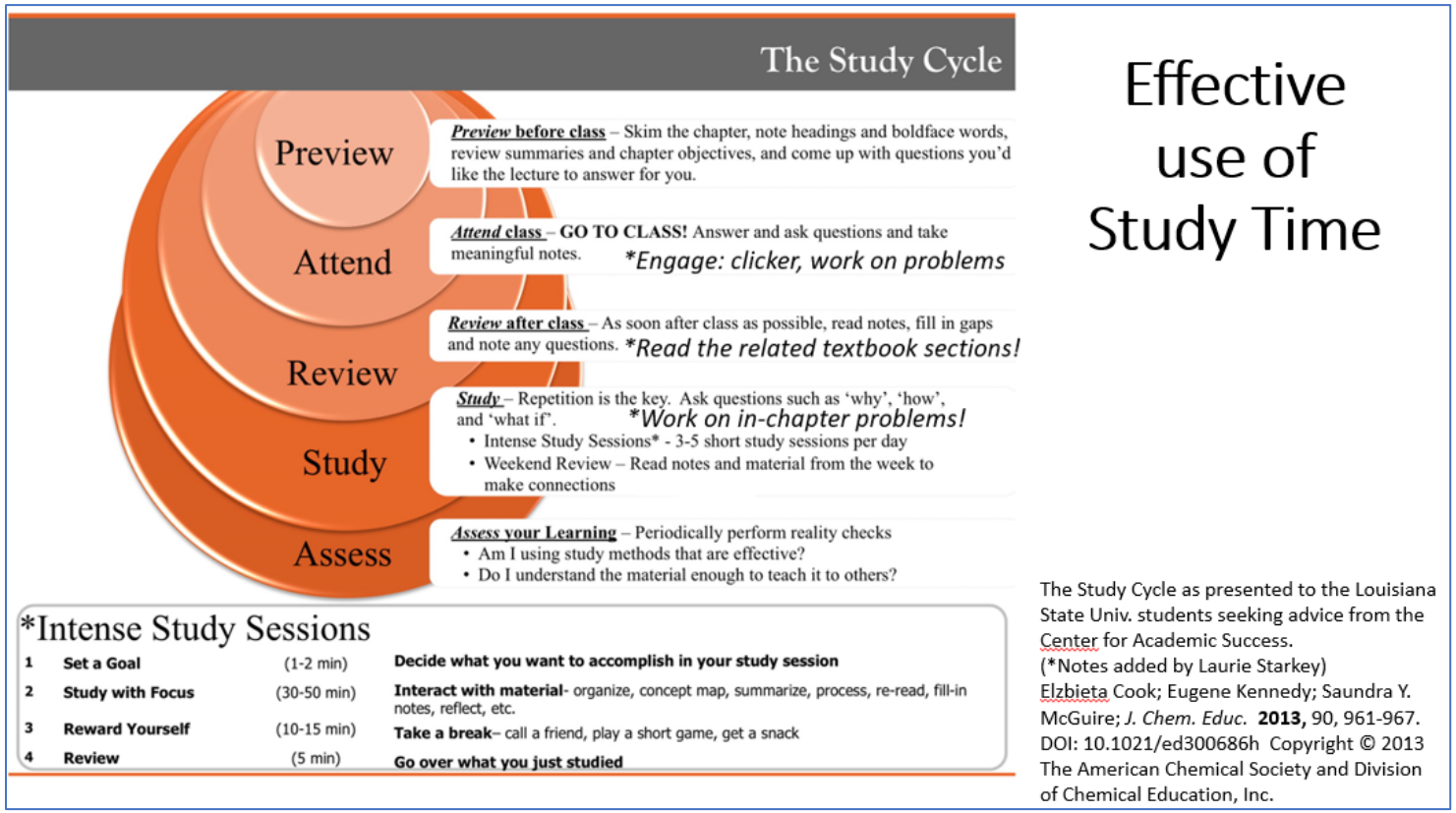
10. Did you experience any test anxiety? Mark all that apply.

☐ I felt rushed.
☐ I was so hungry I could not concentrate.
☐ I panicked.
☐ I could not concentrate because I was too distracted. (Explain.)
☐ I was so tired I could not concentrate.
☐ I experienced mental block.

11. Would you like to improve your performance on the next exam, or maintain your high level if you did well? Mark the things you will do differently or spend more time on when preparing for the next exam.

☐ Improve my time management
☐ Reading textbook section(s) for the first time
☐ Rereading textbook section(s)
☐ Work on/review homework assignments
☐ Solving textbook problems for practice
☐ Working on online homework (e.g., Sapling)
☐ Writing/using flash cards
☐ Writing key concept or chapter summaries
☐ Reviewing sample exams
☐ Working on sample exams
☐ Reviewing/rewriting your own notes
☐ Reviewing materials from course website
☐ Working with a study group
☐ Other (Please specify)

Metacognitive Reflection: Exam Wrapper



Effective use of Study Time

The Study Cycle as presented to the Louisiana State Univ. students seeking advice from the Center for Academic Success.
(*Notes added by Laurie Starkey)
Elzbieta Cook; Eugene Kennedy; Saundra Y. McGuire; *J. Chem. Educ.* **2013,** 90, 961-967.
DOI: 10.1021/ed300686h Copyright © 2013 The American Chemical Society and Division of Chemical Education, Inc.

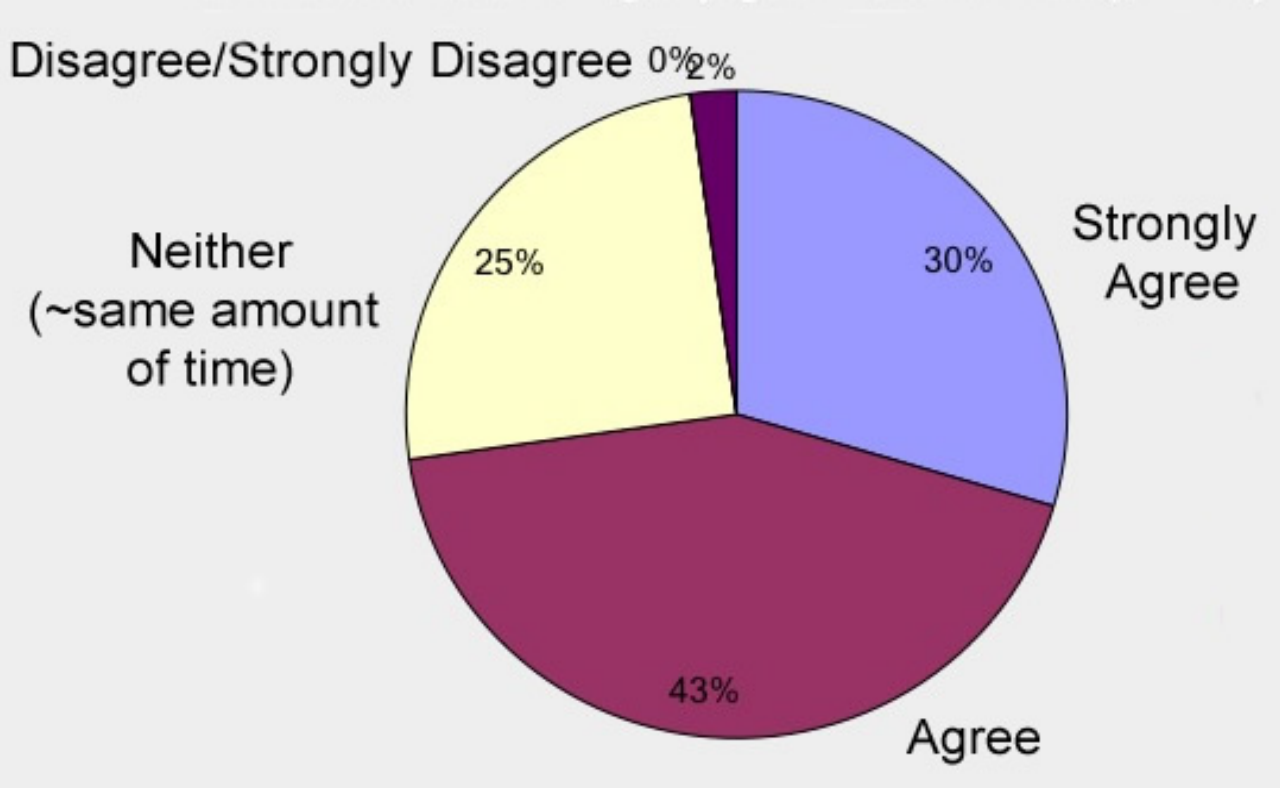
Study Strategy Handouts

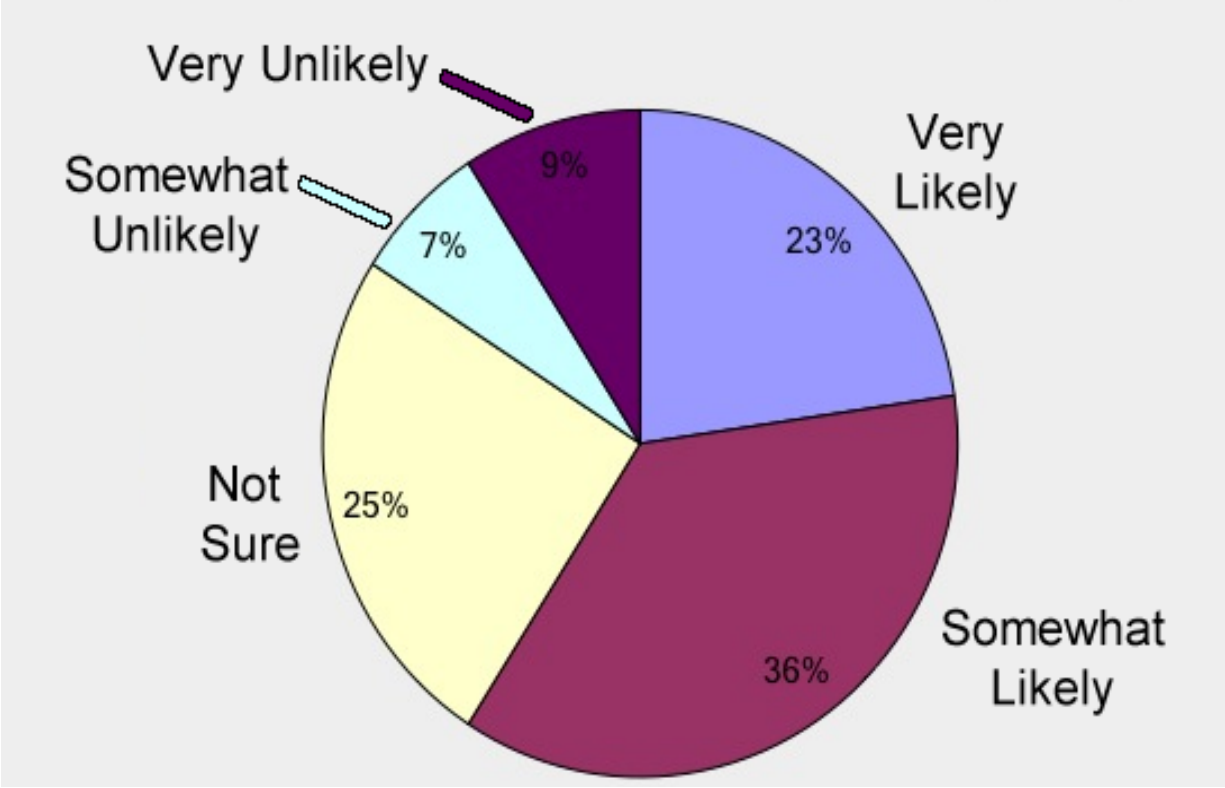
How to "study" o-chem

Additional 4 points course credit if you turn in corrections for the problems you got wrong!

How to earn an "A"

Exam Wrapper – Student Feedback





Spent more time reviewing graded midterm?

Improved grade on second midterm?

Weekly "Friday Five" Reflection

1) Describe how you spent your time working on Organic Chemistry this past week.

2) Describe your plan for working on Organic Chemistry this coming week.

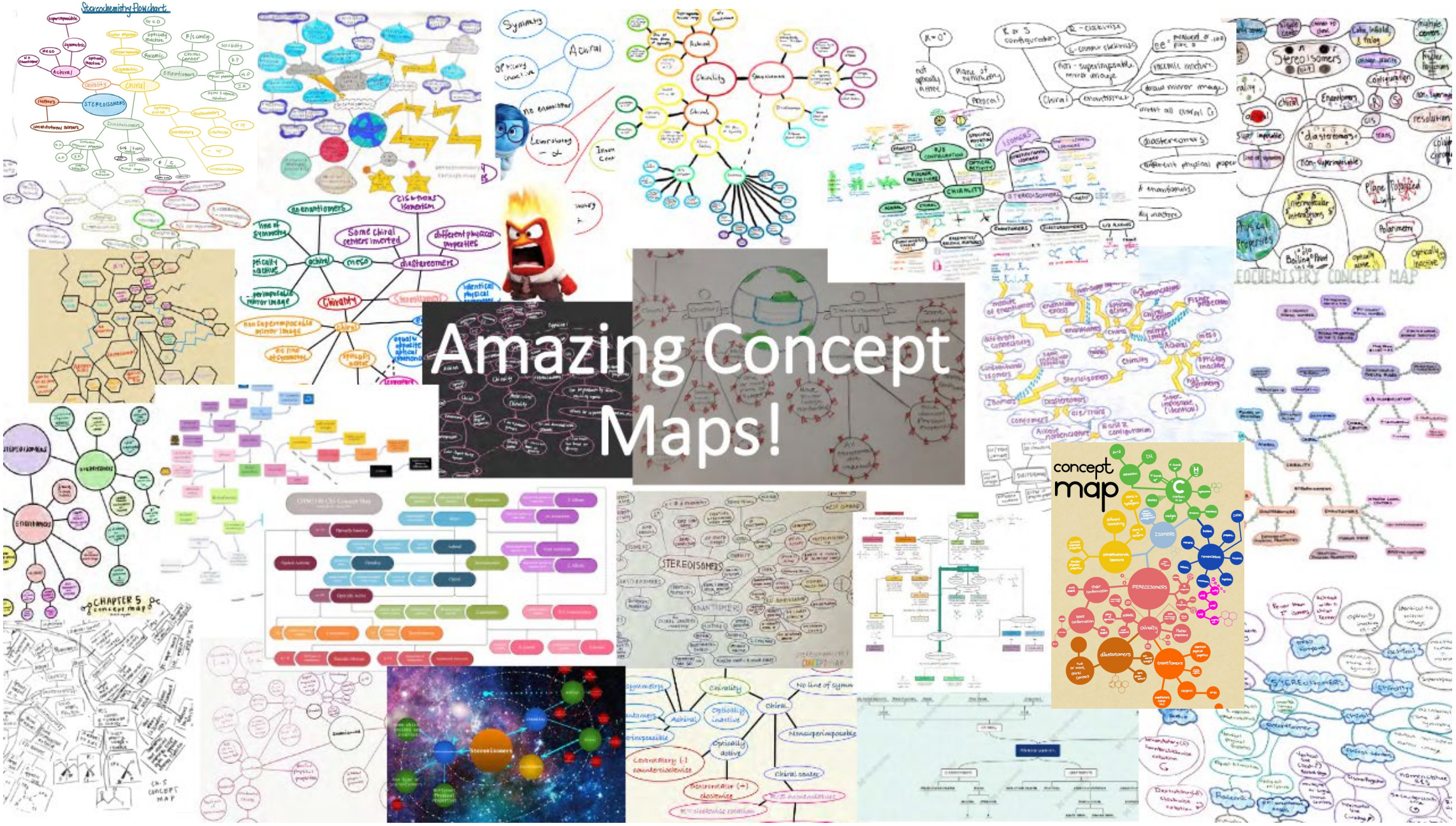
3) Various …*promotes* ***Purpose, Relevance, Value***

…and it's a wonderful way to connect!

Friday5 Prompts (Gradescope)

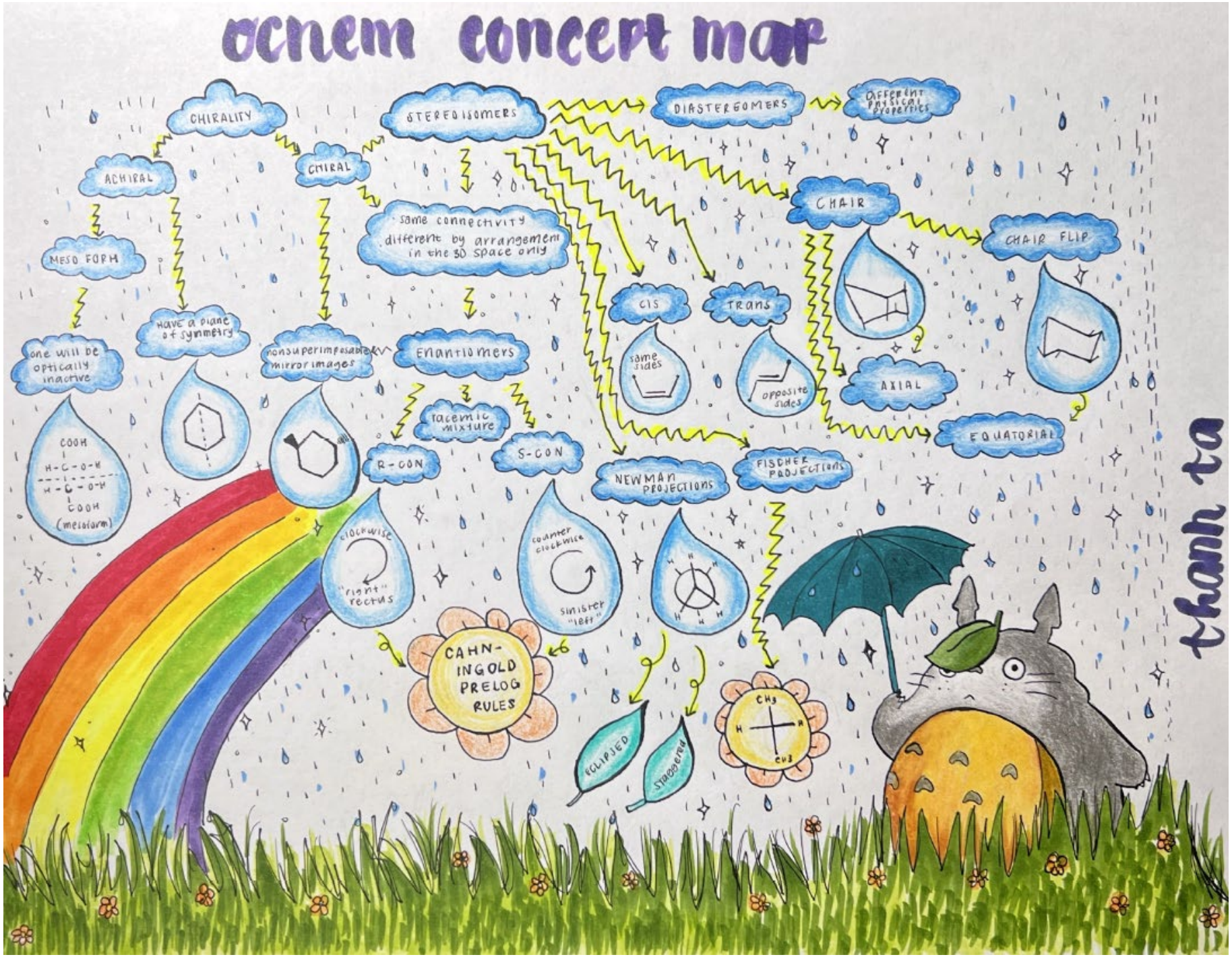
- Create a Concept Map
- Research/share Nanotech topic
- Start-Stop-Continue (mid-semester feedback)
- Mental Health check-in
- Career planning (explore REU)
- Upload a picture of your flash cards
- Celebrate National Chemistry Week (explore webpage)
- ACS celebrates Earth Day
- Favorite volunteer activities? YouTuber? Autumn activities?

Friday5 Responses → Class “411” Announcements



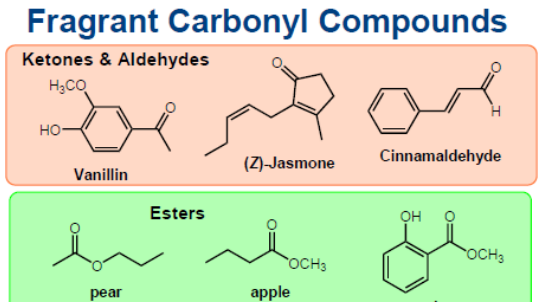
This Year's Stereoisomer Concept Map Winner!

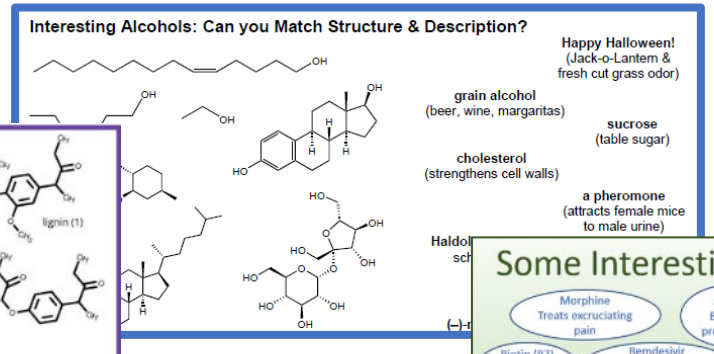
($20 gift card)

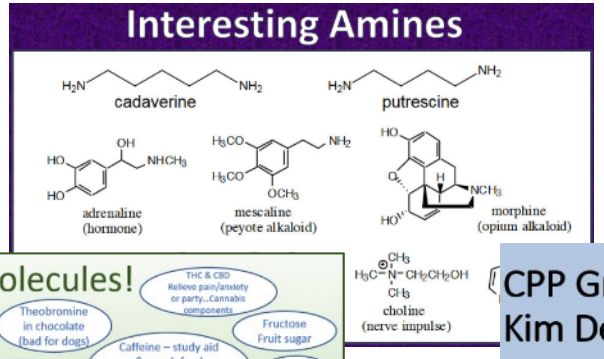


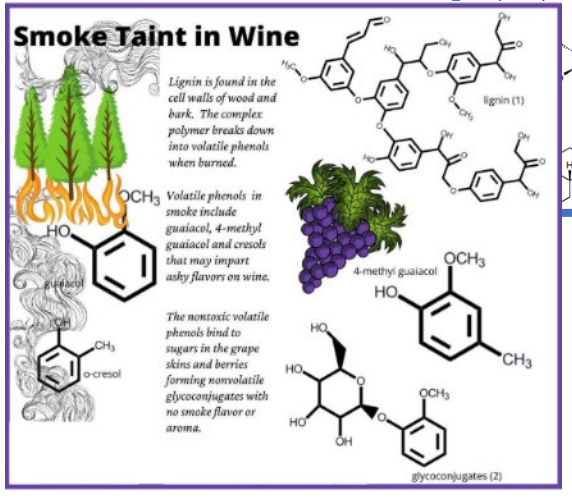
GPS: Focusing on Purpose and Relevance

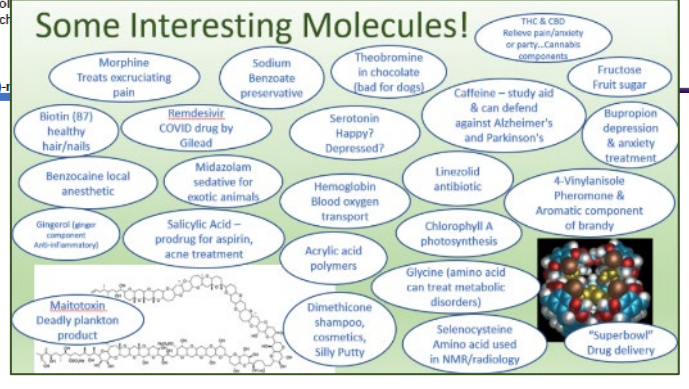
- Weekly reflection assignments
  - Find/share an interesting molecule
  - Tell me why this course matters to you
- Share stories of former students
- Provide "hooks" to grab attention











GPS: Build Community, Sense of Belonging

Jedi Training in 2020-21

GPS: Build Community, Sense of Belonging

Redesigned syllabus

- Student-centered, you/I/we

Introduction video

- Introduce yourself, share your passion

Course Padlet

- Students can introduce themselves

Welcome to Organic Chemistry!

Encourage study groups

- Organic Learning Community (OLC)
- Offer credit for weekly report w/selfie pic Student testimonials

Communicate: Discord Server, Google Voice (texting)

GPS: Build Community, Sense of Belonging

OLC Reporting (Gradescope Online Assignment)

OLC report and phot 1

PROBLEM

Insert Images Insert Field

```
Who did you get together with? When was the
study session, and how did you meet up?

|____|

What did your OLC work on during the study
session?

|____|

What did you contribute to the session?
What did you learn?

|____|

Please upload evidence of your study
session (screenshot/photo/notes).  Thank
you, and have a great week!

|files|
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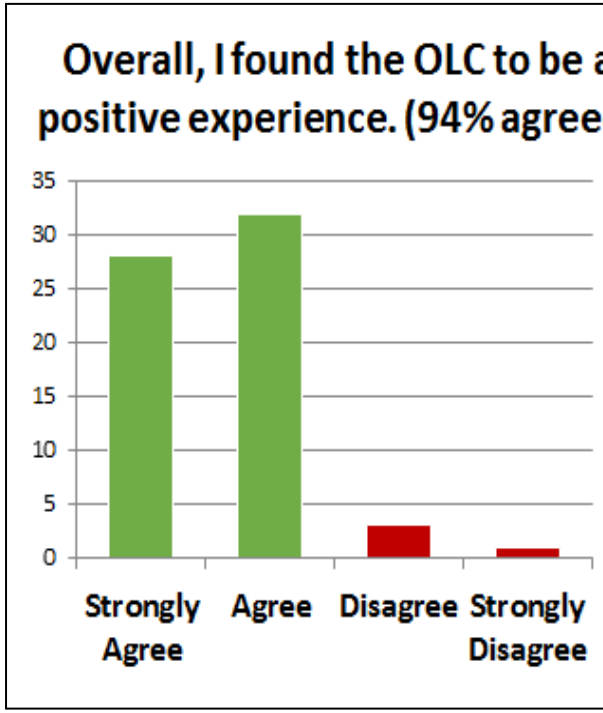
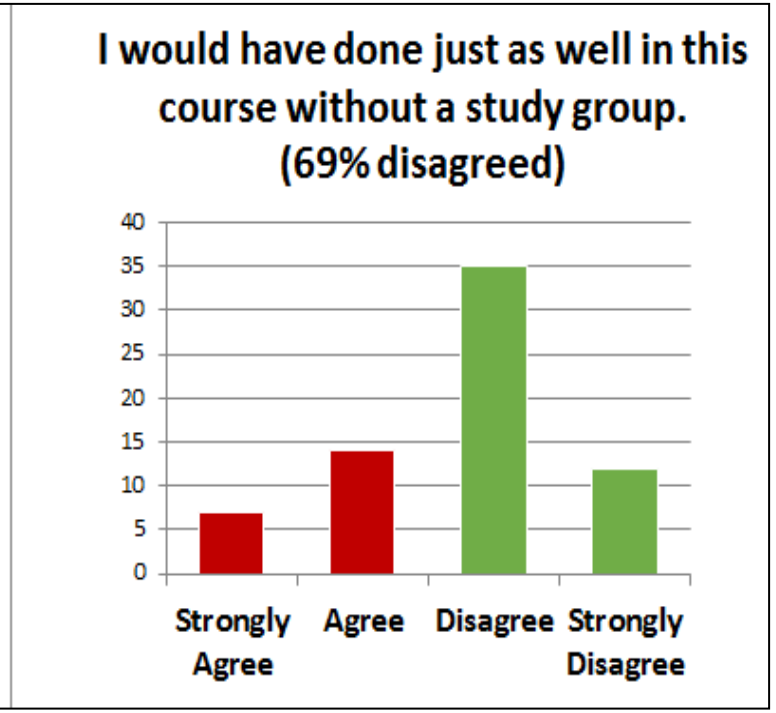


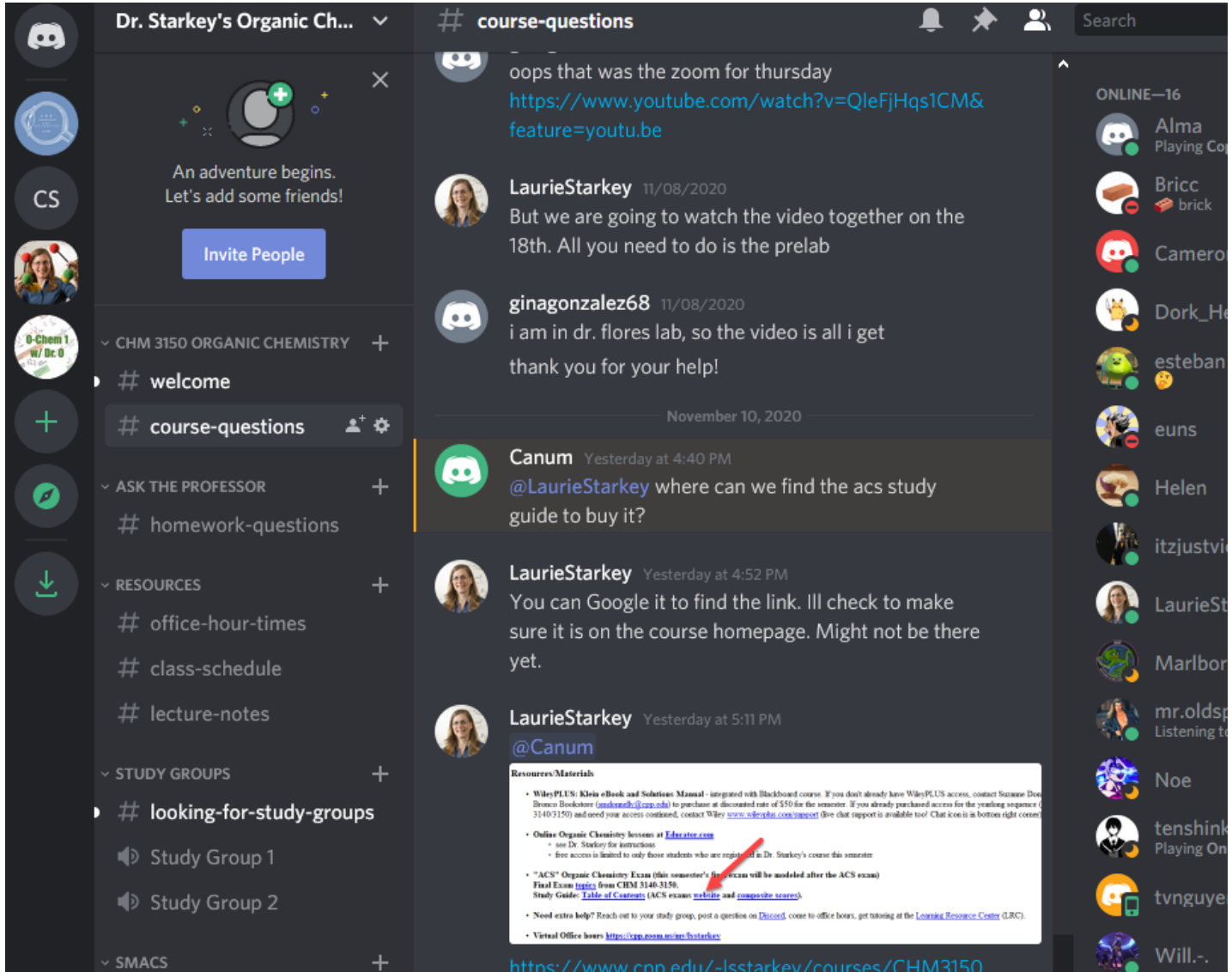


GPS: Build Community, Sense of Belonging

Fostering Communication

- Discussion boards
- Google Voice (texting)
- Discord server
  - instructor/student Q&A posts
  - student/student
  - Familiar to gamers

https://discord.gg/m6gQWE



I am grateful for the relationships we have built!

Professor Starkey,

I know you are a cat mom so I thought I would share this photo of my kitten! I found her with my chemistry flashcards one morning in her favorite box. Not sure how she was able to pull that off. Hope you enjoyed ☺

Thank you! Any Questions?

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Chat

From [redacted] to Everyone: 11:0
can you explain again about how its more stable

From [redacted] to Everyone: 11:0
Seeing whether or not I got a practice problem right is like watching the climax of a movie. Super suspenseful

From [redacted] to Everyone: 11:0
and theres always a plot twist^

From [redacted] to Everyone: 11:0
hahah

From [redacted] to Everyone: 11:0
Yeah I thought I got it wrong
Without irony this gets my adrenaline flowing

From [redacted] to Everyone: 10:40 AM
yessss !!!! good job

From [redacted] to Everyone: 10:40 AM
you're doing great! very cool

From [redacted] to Everyone: 10:40 AM
The test will still 100% kill me

From [redacted] to Everyone: 10:40 AM
same^

From [redacted] to Everyone: 10:40 AM
^^^

From [redacted] to Everyone: 10:40 AM
Yay! Same here lol

From [redacted] to Everyone: 10:40 AM
same

From [redacted] to Everyone: 10:41 AM
nooooo! good vibes guys we got this !

From [redacted] to Everyone: 10:41 AM
But getting this question right makes my brain feel like it just expanded to galaxy size

From Me to Everyone: 10:42 AM
awesome!