

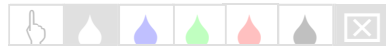
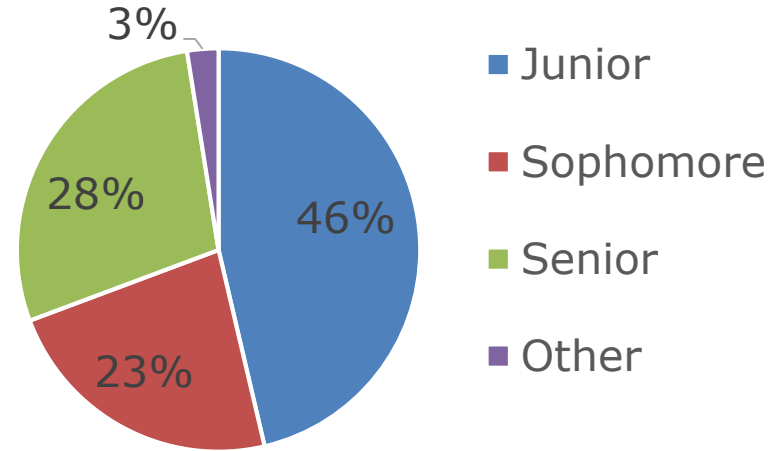
Twitter in Large Lecture Classes

@Innovate Symposium
Spring 2017
Dr. Toggerson



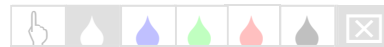
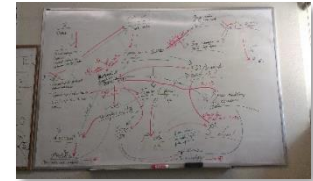
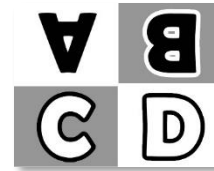
P132

- 518 students total in two sections
 - One of ~300
 - One of ~200
- Taught in Hasbrouck 20
- Essentially all are a life science major
- Second semester in a sequence
- First semester is taught in a TBL format



Class-time within a unit is a mix of...

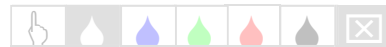
- Lecture
 - Slides and recording posted after class!
- Conceptual questions using ABCD cards
- Problem solving on whiteboards
 - Students bring own marker!
- Writing
 - Paper
 - Twitter



Writing

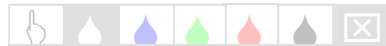
Important for two goals of the course:

- Physics is a list of principles and the fundamental ideas that relate them, NOT a list of equations
- These principles can be expressed in multiple ways
- I want students to be able to do more than solve end-of-chapter problems
- I want students to understand the principles involved!
- Writing is a good way to focus on that!
- They are asked to do on exams!



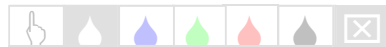
But Twitter... Really???

- Similar to most of you, my first response to Twitter was, “Okaayyyy... what is the point?”
- As you know, however, the scientific community LOVES Twitter
 - Paper announcements
 - Mini-Publicity releases
- Also conferences!
 - Talk about presentations ← *Backchannel*
 - Conference announcements
 - Meet with people
- These are reasons I give my students for joining up

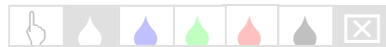


We use Twitter in P132

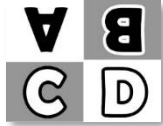
- During class (yes, I am *encouraging students* to have phones out and use it during class!)
 - Ask a question
 - If students are not comfortable talking in front of 300 people
 - If students feel that their question does not need to be urgently answered but students want to write it down and not forget
 - Hint: Use the slide numbers for this!!!
 - If students have a similar question, students can up-vote it by re-tweeting!
 - TA will monitor and bring up at a good point
 - Answer their colleagues questions!
 - Add a comment to the lecture with something students find online
 - In-class open-ended writing activities
- Another venue for homework help from their peers!
- Some out-of-class assignments



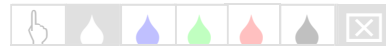
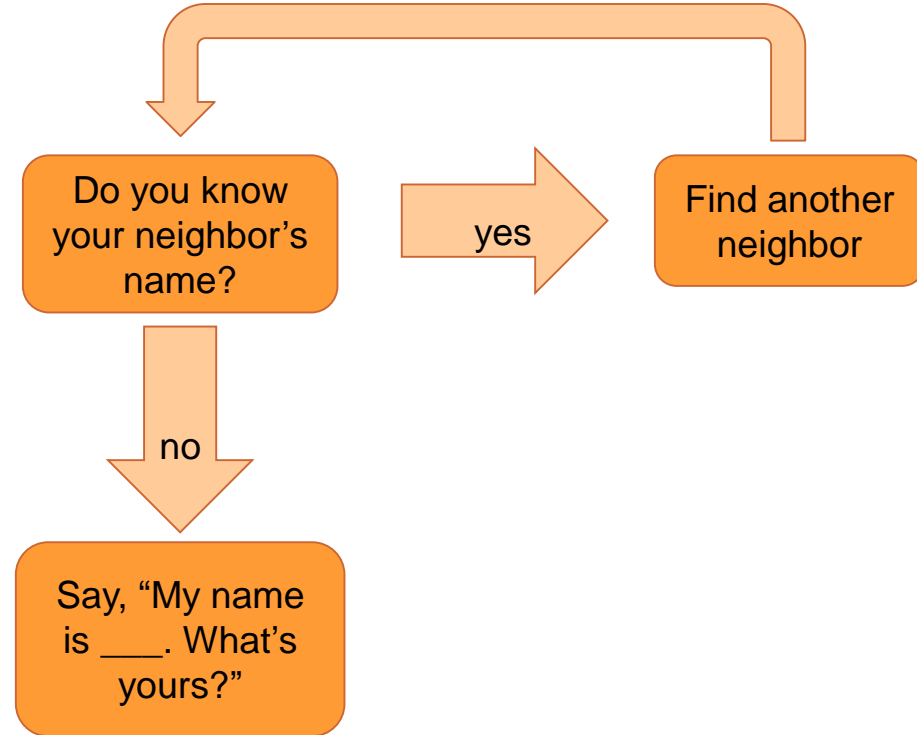
SOME EXAMPLES



My welcome slide for the first day



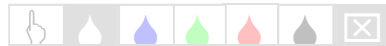
- Pick up a card from front
- Introduce yourself to your neighbors using the flowchart 😊
- If you have not already, setup a Twitter account for this course using the instructions on Moodle
- The big questions for this class: What is light? What is an electron?
- Tweet something that you want to learn or are curious about with these topics with **#P132Curious**



Get people thinking as they are coming in

- *Tweet the answer to the following with **#p132virus***

Are viruses alive? Justify!





In-Class Exercise from Today

There are only a few equations for the quantum unit.

- They have to be combined with conceptual understanding.
- What does each equation they mean? To what does each equation apply?
- **Activity:** For each equation/question, I want students to tweet an explanation to the hashtag
 - students may only use only words permitted by *Simplewriter*
 - students may also use:
 - Electron
 - Energy
 - Momentum
 - Mass
 - Be sure to think, “Does it apply to just light or matter or both?”
- E.g. $E = hf$:
 - Energy of smallest piece of light goes with color: more blue means more energy

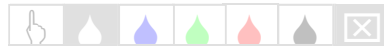
▪ **#p132eq1** $p = h/\lambda$

▪ **#p132eq2**
 $p = mv$ VS. $p = E/c$

▪ **#p132eq3** $v = \lambda f$

▪ **#p132eq4** $E = \frac{p^2}{2m}$

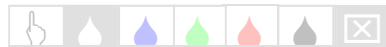
▪ **#p132eq5** $E = \frac{h^2 n^2}{8mL^2}$



Twitter Assignment Example

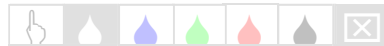
For this assignment, you are to go out and take a picture of an example of reflection or refraction either in your everyday world or in materials for another course. Tweet your picture and a twitter-caption with the hashtag #p132NZZN where NZZN is your team name without the dashes. As described in the syllabus, any good faith effort will gain full credit of two-points. The most creative will get a bonus of 3. A half-hearted attempt will be worth 1 and no submission will get zero points.

This assignment is not meant to be stressful but is meant to be fun and a way to achieve the goal of the course of encouraging you to see connections between what we are discussing and your other courses and/or the world around you.



Data!

- <http://www.twitonomy.com/>



References

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