



Teaching a Flipped Classroom

- Introduction to the flipped classroom

Ali Froehlich, CTLE

- The flipping experience

Doug Berman, Physics

- Designing the course website

Carlos Asarco, TLT

- Questions & demonstrations





Imagine what you want to
do with your students
that you don't do today

Typical Lesson



lecture

takes place in the

Classroom



practice
“homework”

takes place at

Home

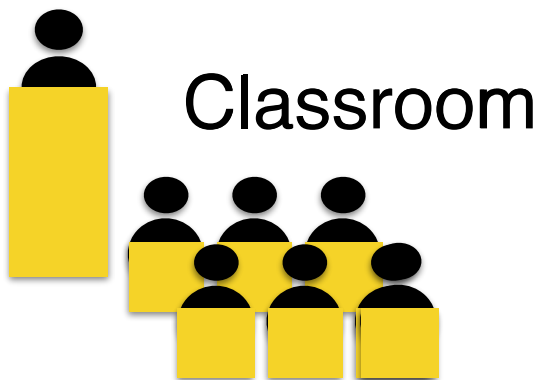
Typical Lesson



lecture



practice
“homework”



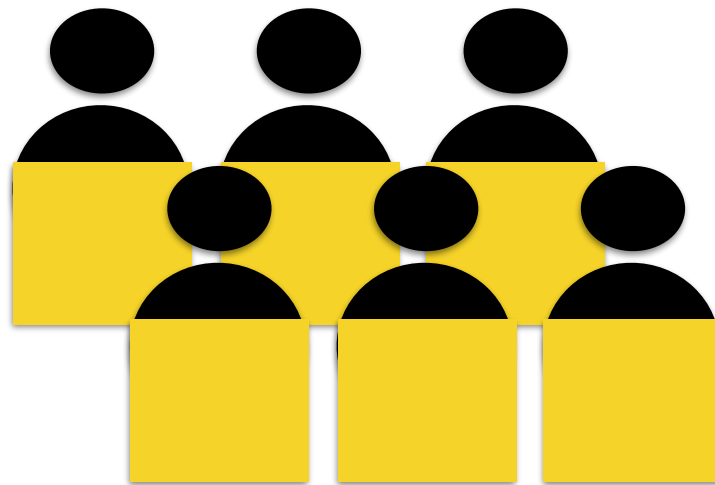
Classroom

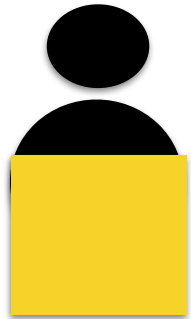


Home

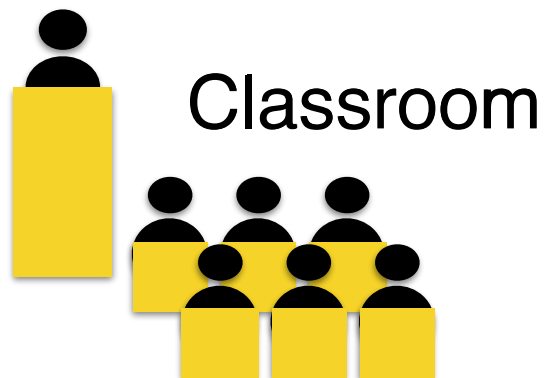
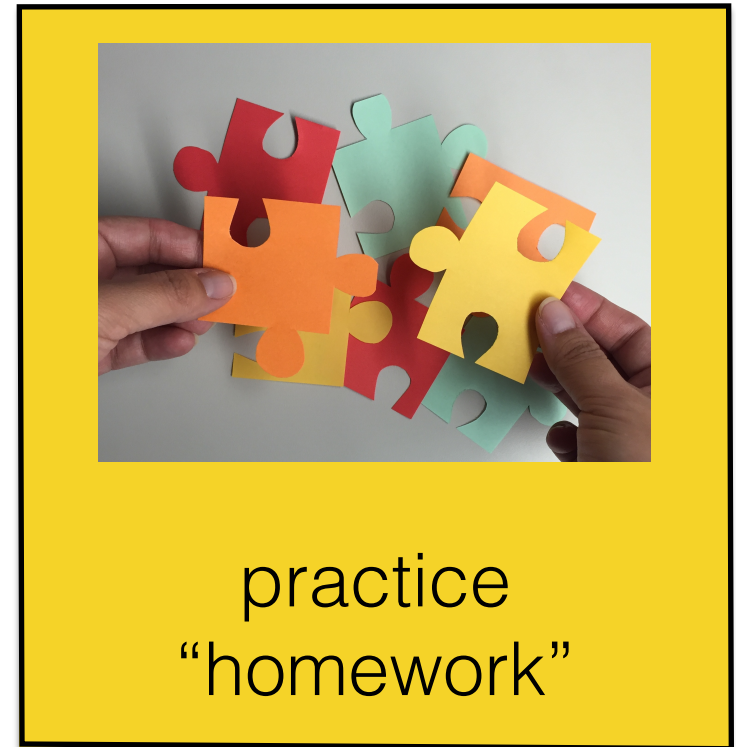
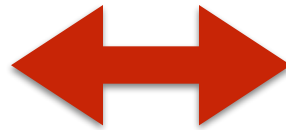
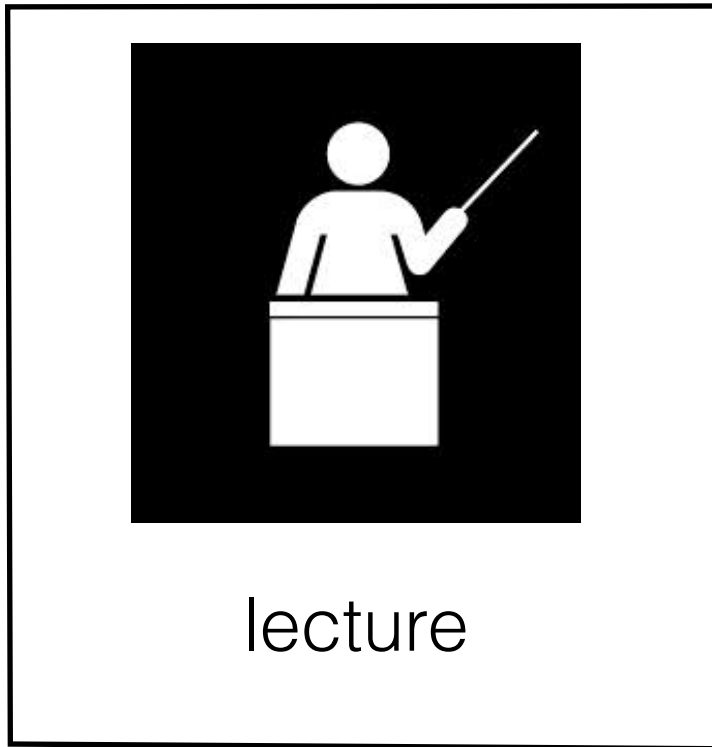


lecture

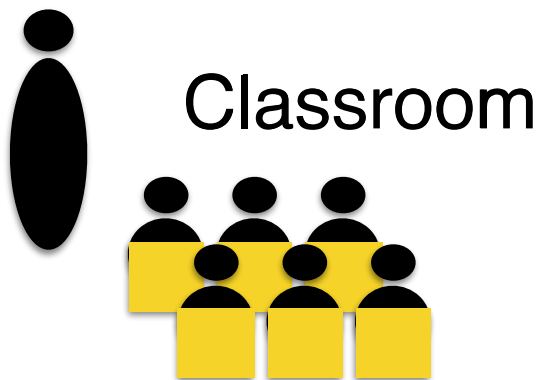
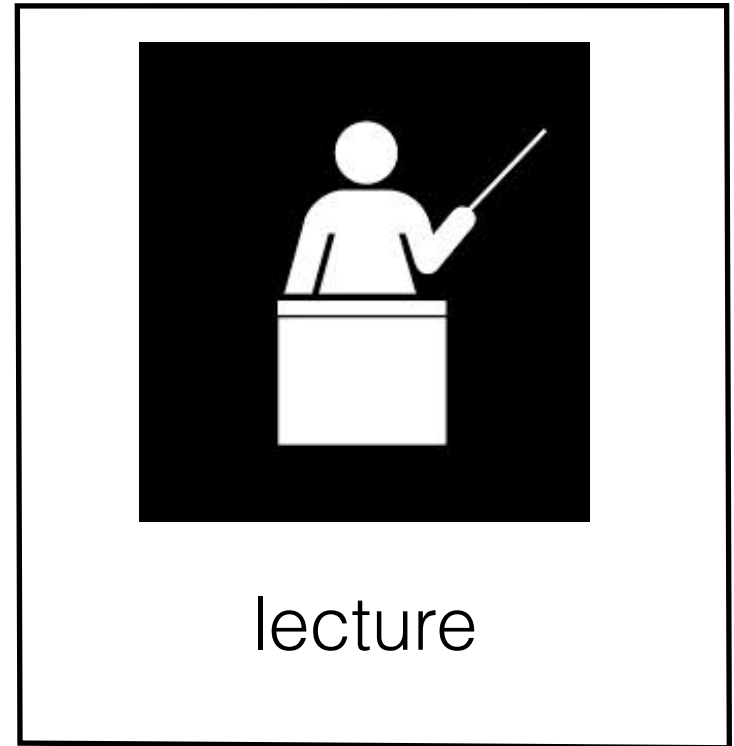
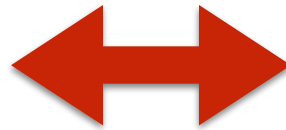
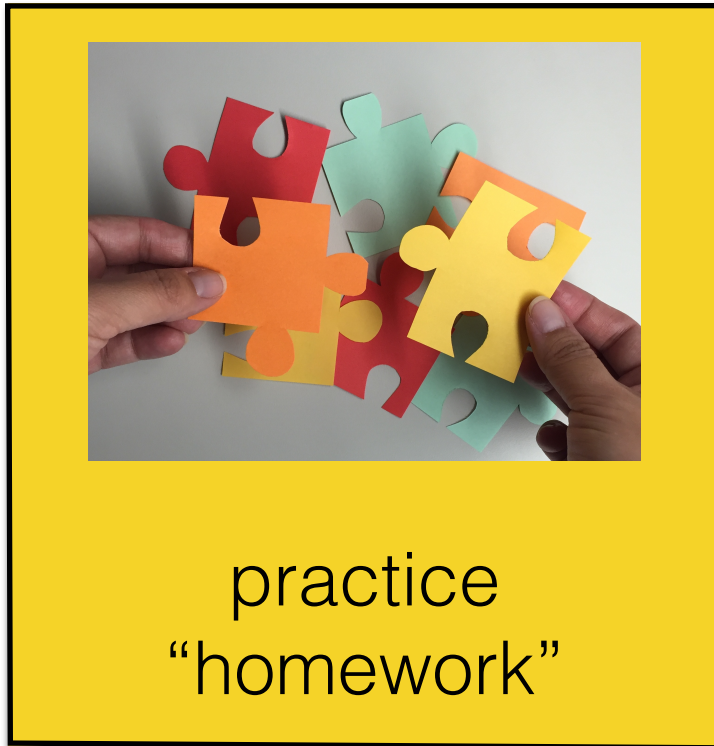




Typical Lesson



Flipped Lesson



Flipped Lesson



vs

Hybrid Lesson



Flipped Lesson



Instruction moved online
(outside of the class)

Practice moved
into the classroom

Hybrid Lesson



Hybrid Lesson



Proportion of classroom activities occur online

Equivalent reduction in classroom time



Hybrid Lesson

Reduction in classroom time in proportion to online activity



Flipped Lesson

Reversal of lecture/
homework paradigm

Flipped Lesson

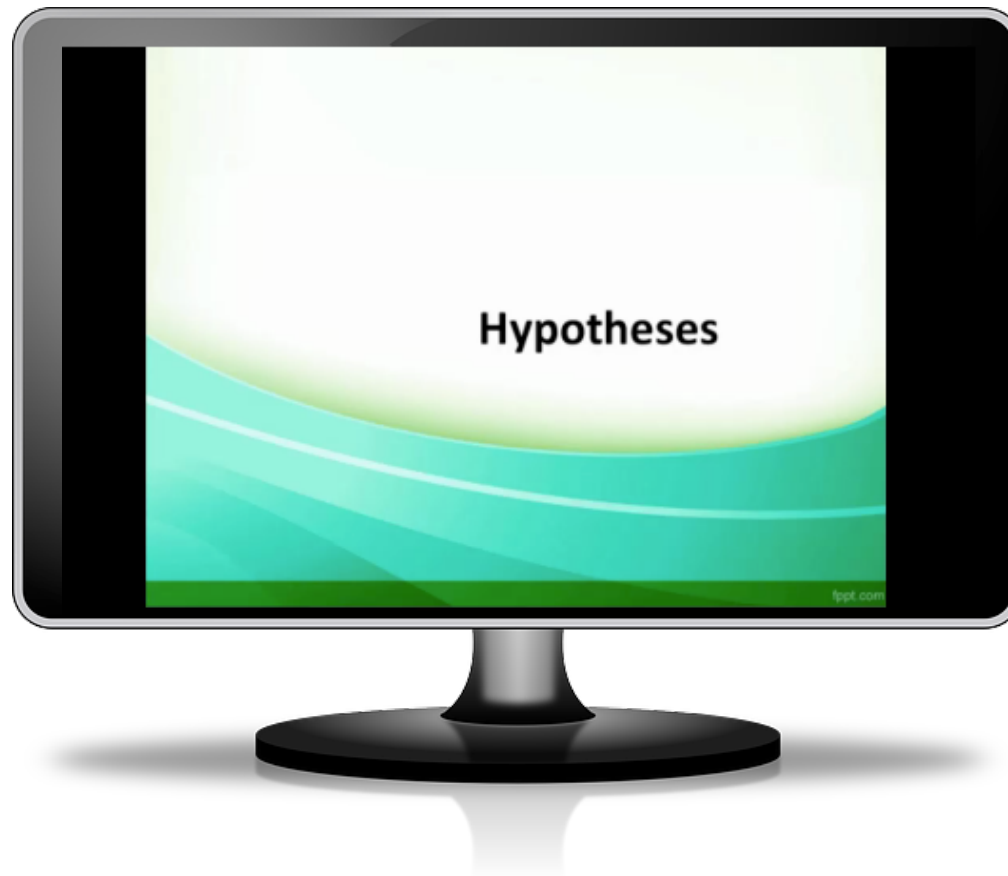


Flipped Lesson

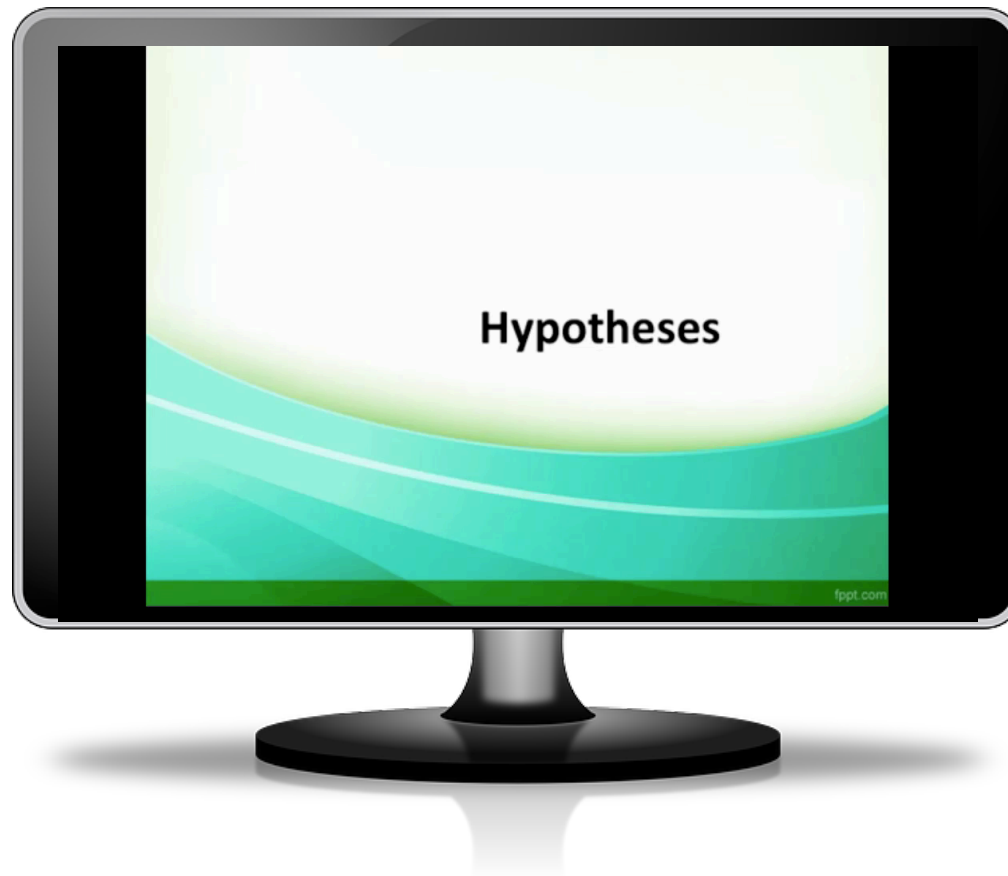


1. Video lectures
2. Get students to watch video lectures *before* class
3. Plan in-class activities

1. Video Lectures



1. Video Lectures



Screen capture with video

The screenshot shows a web browser window displaying the Top Hat sign-up page. The browser's address bar shows the URL <https://www.tophat.com/signup>. The page features a navigation menu with links for 'About', 'Tour', 'Features', 'Testimonials', 'Pricing', 'Professor Sign-up', 'Student Sign-up', and 'Login'. The main heading reads 'Your students pay for Top Hat just like they would a textbook'. Below this, there is a question 'Are you a student?' with a green 'Start here' button. Further down, the text 'Start making every lecture count today' is displayed. Two pricing plans are shown: 'Starter' (Professors Always Free, Students Free) and 'Professional' (Professors Always Free, Students pay \$20). A video overlay in the bottom right corner shows a woman with short grey hair and glasses speaking.

Classroom Engagement Technology | Top Hat

<https://www.tophat.com/signup>

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Start making every lecture count today

Starter	Professional
Professors Always Free	Professors Always Free
Students Free	Students pay \$20 ⓘ
<ul style="list-style-type: none">⊖ 30 Student Limit⊖ 1 Course Limit✓ Email Support⊕ Phone Support⊕ Personalized Training⊕ LMS Integration*	<ul style="list-style-type: none">✓ Unlimited Students✓ Unlimited Courses✓ Email Support✓ Phone Support✓ Personalized Training✓ LMS Integration*

Tablet or Smartpen

Converting fractions to decimals

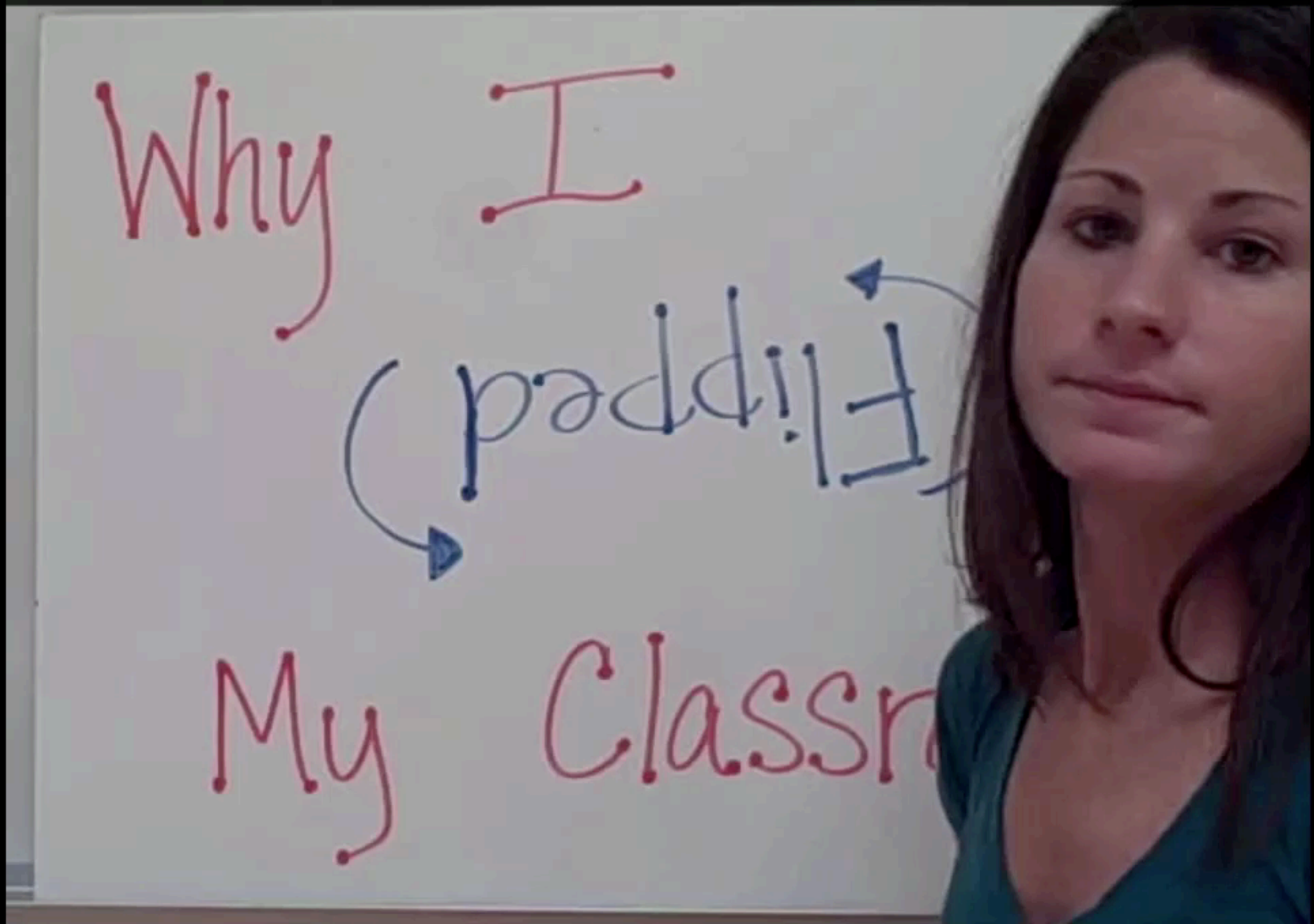


Document camera

Use Gauss-Jordan elimination or Gaussian elimination to solve the system.

$$\begin{cases} x + y - z = 9 \\ - \\ - \\ - \end{cases}$$

Instructor at board



Recorded class session

Lecture 13 10/11 Linear Programming





iTunes U



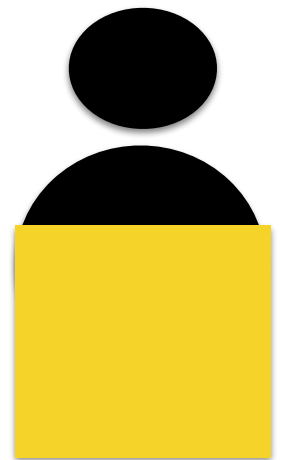
TED

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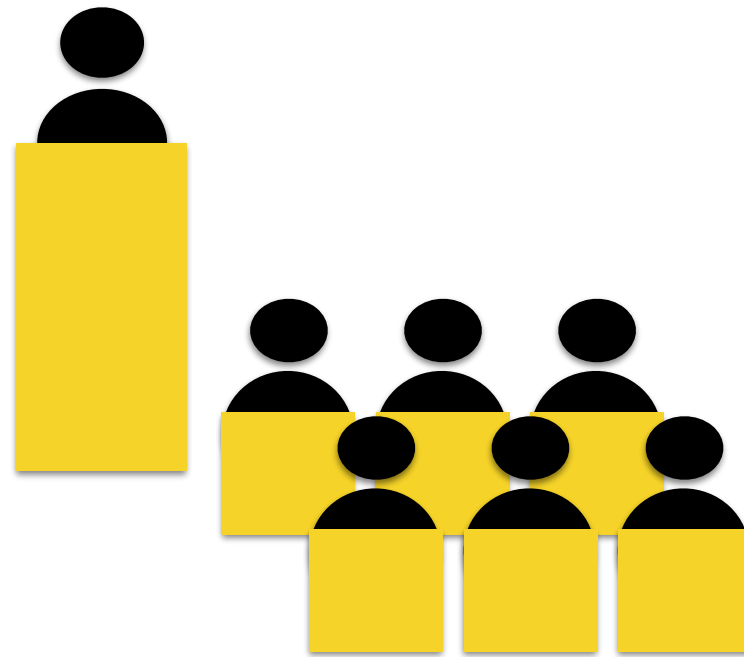


TED
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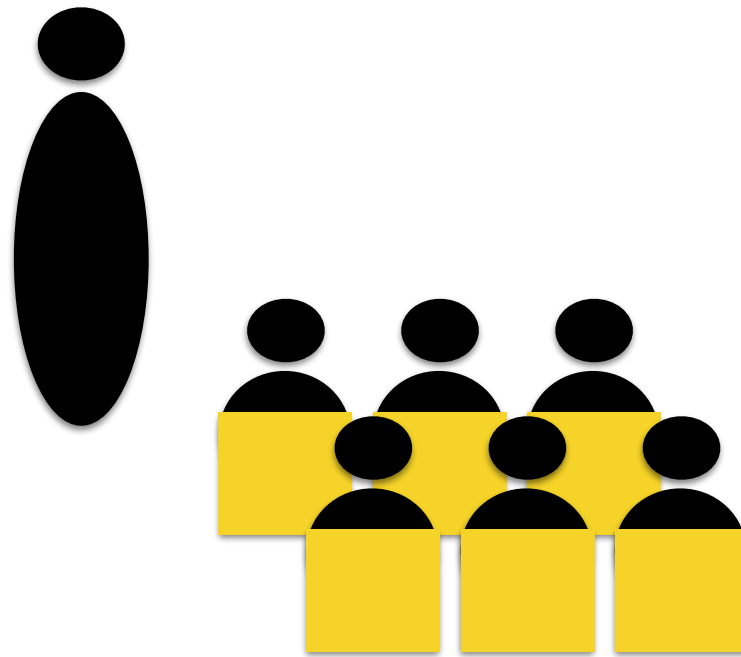
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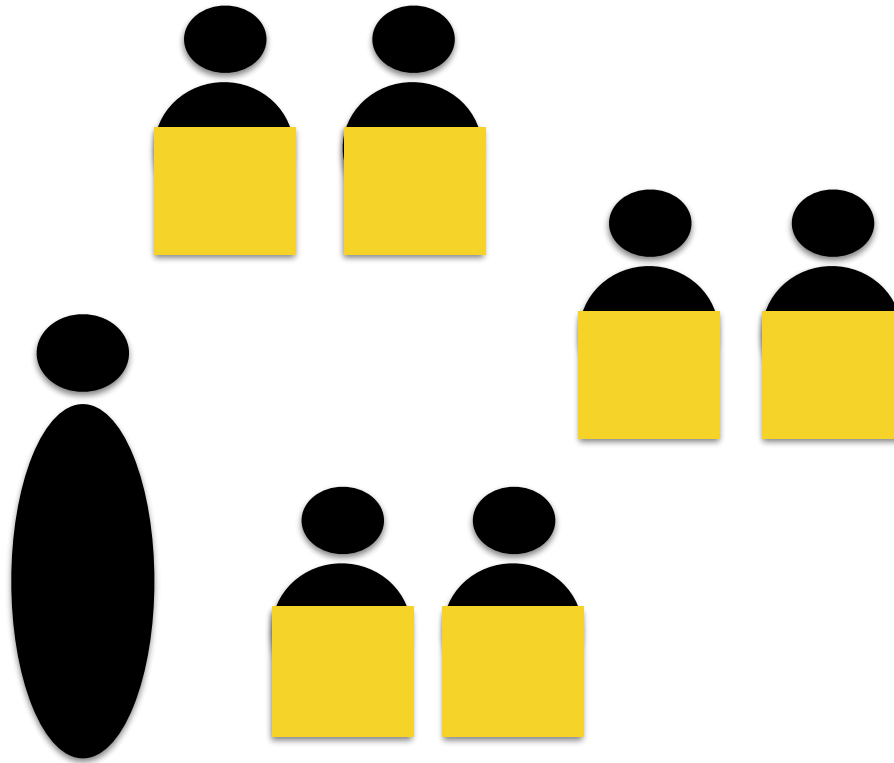
3. Plan in-class activities



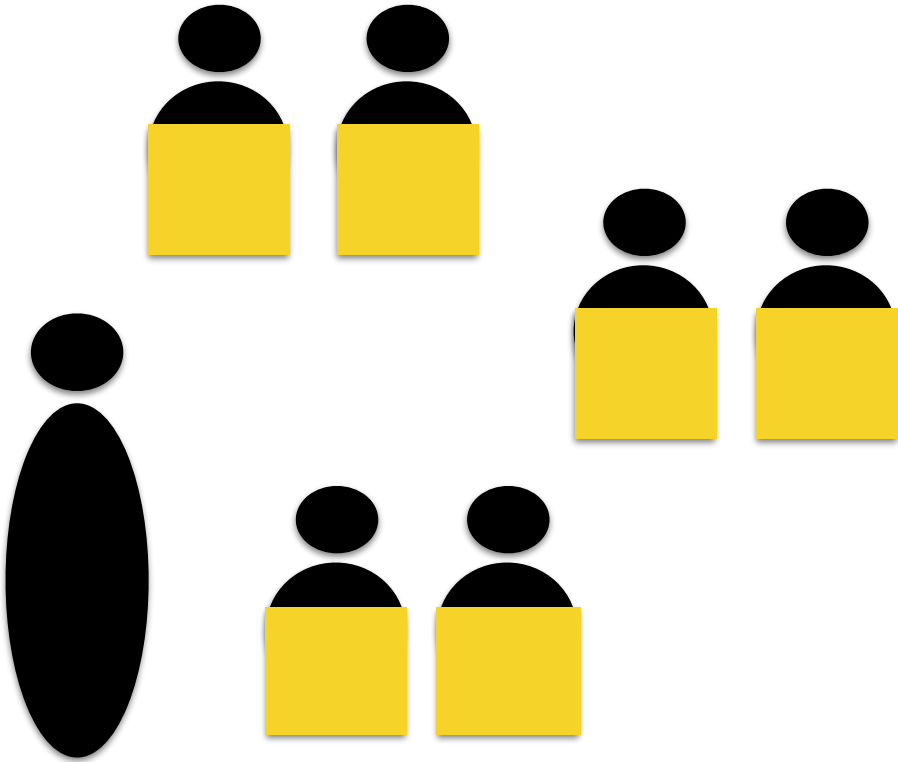
3. Plan in-class activities



3. Plan in-class activities



3. Plan in-class activities



- One-on-one time with students
- Work on problems together
- Discussions
- Higher-level thinking
- Real-world applications
- Problems identified & immediately addressed
- More questions