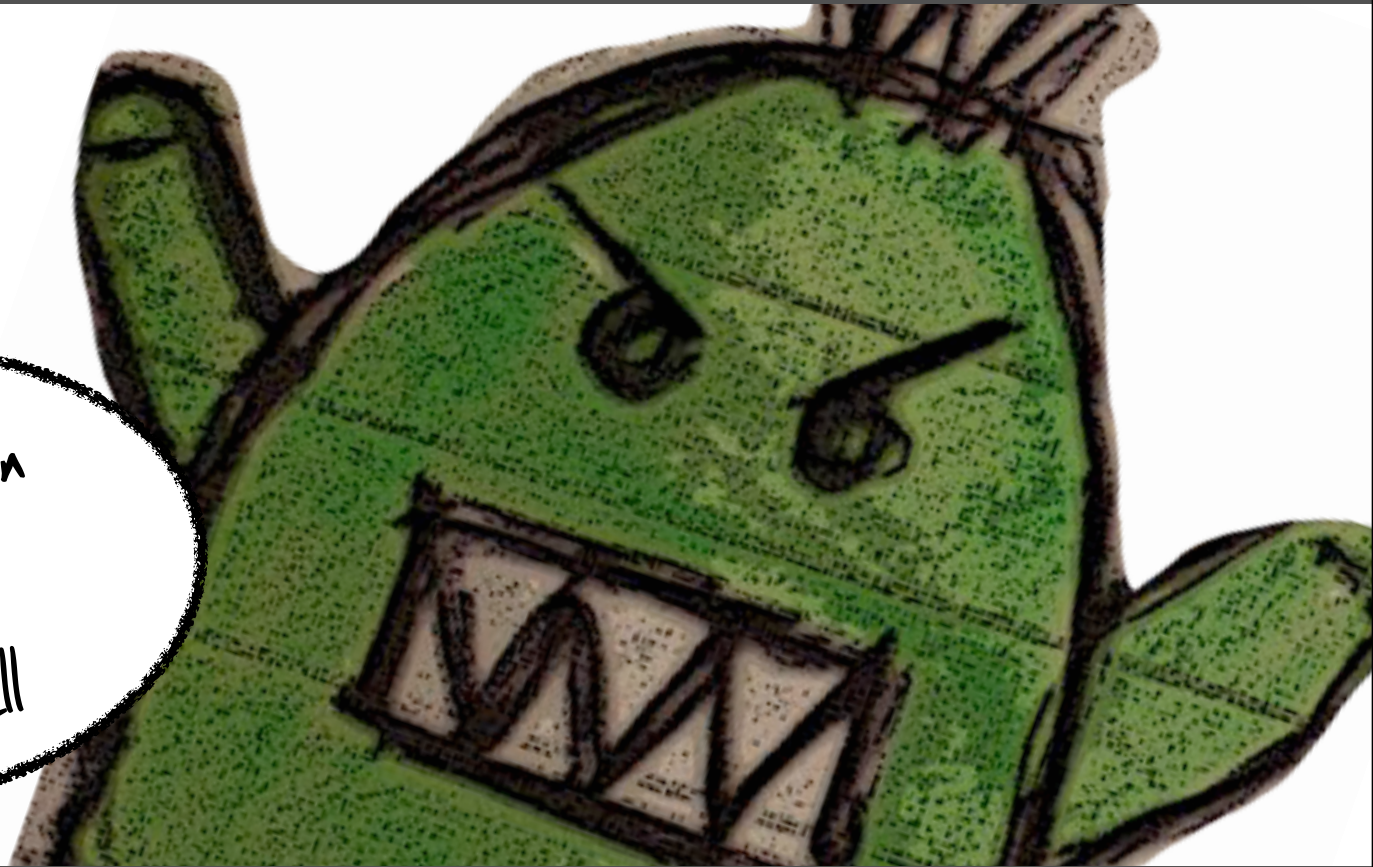


Flipping your classroom with Peer Instruction: How to Turn Your Students' Worlds Right side Up

slides:
[scholar.harvard.edu/
julieschell](http://scholar.harvard.edu/julieschell)

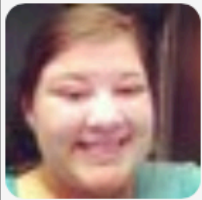
follow me on
twitter
[@julieschell](https://twitter.com/julieschell)



Julie Schell
Sr. Educational Research Associate
Mazur Group, Harvard University

FlipCon 13
Stillwater, MN
June 18 2013



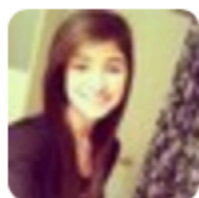


brianna girlie @bripaigegirlie

33 mins

I hate school. Ihateschool. I HATE school. I h8 school. I hate skool.
lh8skool. I. hate. school. Eye h8 skool. I HATE SCHOOL. **#ihateschool**

Expand ↩ Reply ↻ Retweet ★ Favorite ⋮ More



LundenStallings @livestrong_1

Feb 25

I was having a pretty good night, until I realized i gotta get up for prison in the morning 😊🔫 **#ihateschool**

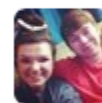
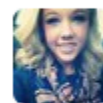
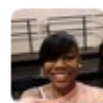
Collapse ↩ Reply ↻ Retweet ★ Favorite ⋮ More

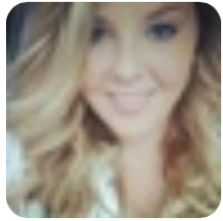
11

RETWEETS

3

FAVORITES





Allison Newby ♥ @allisonnewby13

Tomorrow is new fresh start to a long week of torture.

#ihateschool

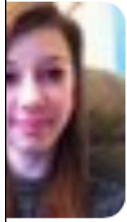
Expand



Shupe @ShupeMuhongo

If I hit my head hard enough on this desk do you think I'll die
#ihateschool

Expand



Kaylee Krepps @kay_lay13

Fel

Dear pre-calc, **I hate** your stinking guts You make me vomit You're the scum between my toes Love me P.S. send that message to **physics** too



JasmineJandu @JasmineJandu

13 mins

I hate the fact that there's school tomorrow. Dead serious right now, I'd rather throw up and sit on it. **#ihateschool**

Expand

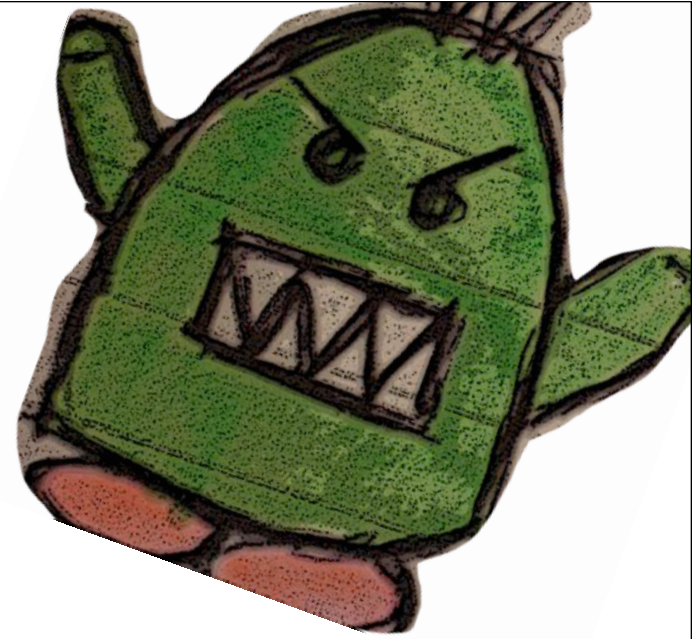


Kelly Chen @pianokchen

4h

School is so boring [#ihateschool](#)

Expand



Kelly Chen @pianokchen

School is so boring [#ihateschool](#)

Expand

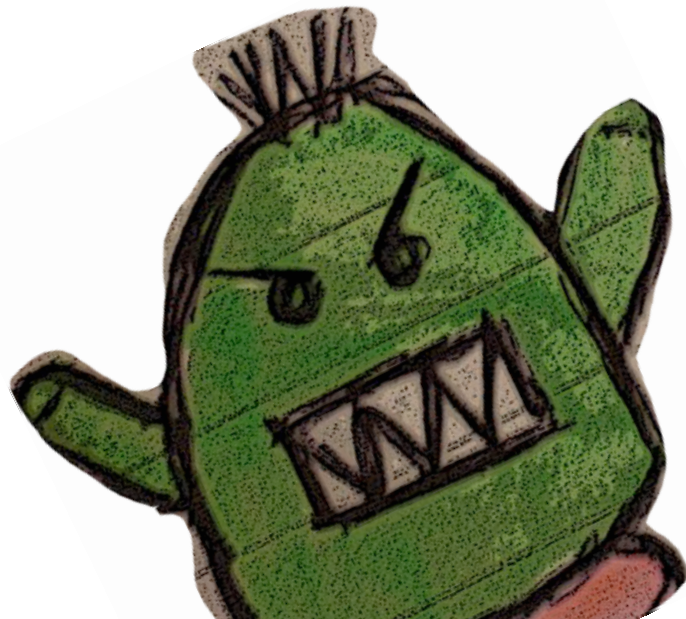
4h



brookedlane @brookedlane14

Completely. Bored. Out. Of. My. Mind. 🙄🔫 #ihateschool

Expand



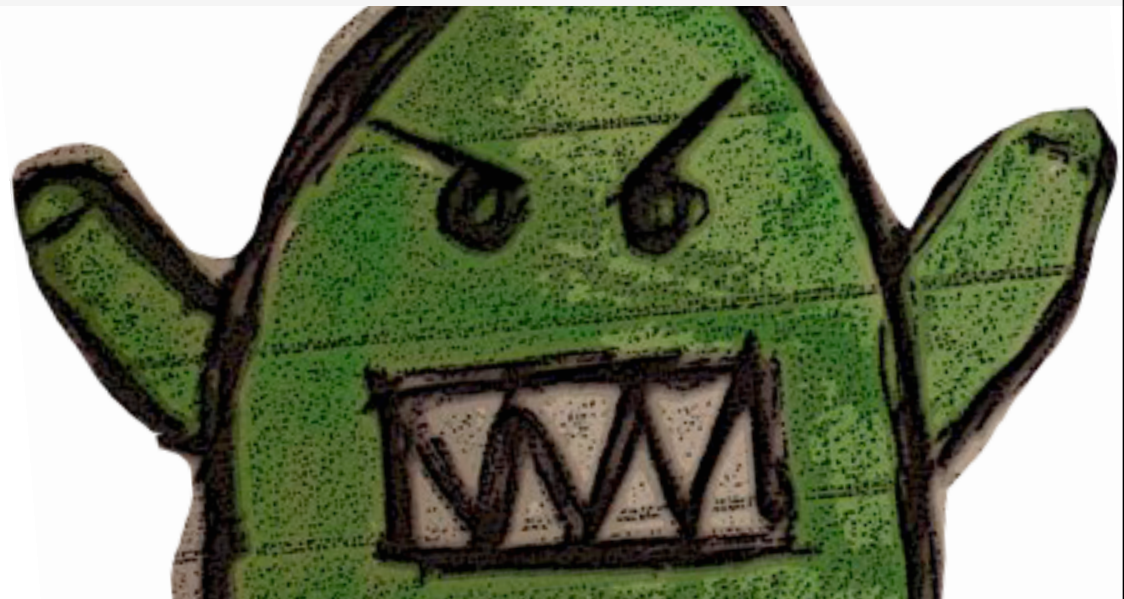


Jessie Stockstad @jessistockstad

16 Apr

Casually sitting in my room staring at the wall cause that's more fun than actually studying **#iloveschool**

Expand ← Reply ↻ Retweet ★ Favorite ... More





✨ Lexie 🚢 ✨ @XxL_weeezyxX

17 Mar

History = there dead dude.
English = dictionary/ google.
Science = not a nerd. Don't need it.
Math= calculator.
#ihateschool #die

Expand



✨ Lexie ✨ @XxL_weeezyxX

17 Mar

History = there dead dude.
English = dictionary/ google.
Science = not a nerd. Don't need it.
Math= calculator.

#ihateschool #die

Expand



KAILS @kaillleybird

7 Apr

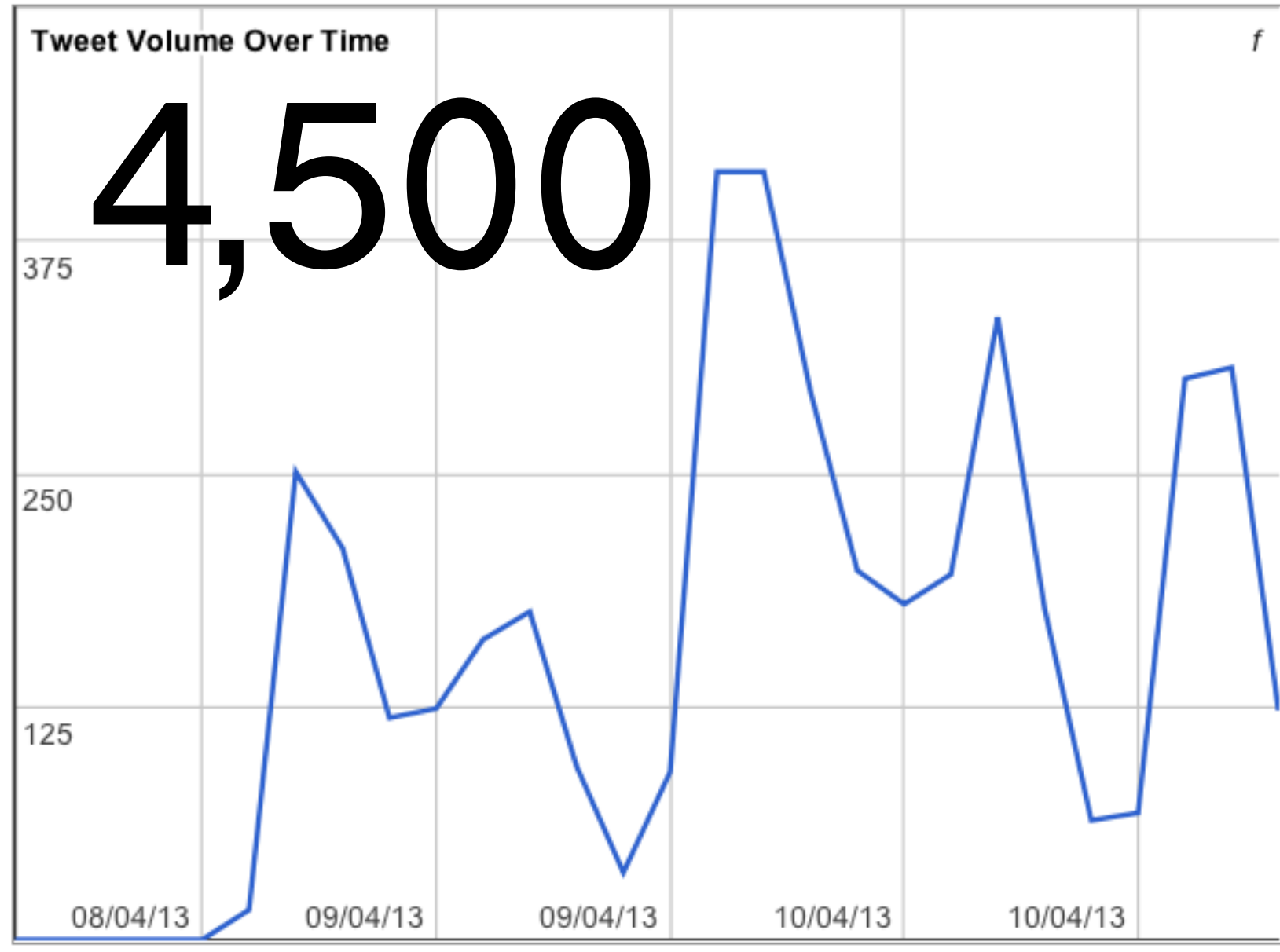
Never learned how to get a loan, buy a house, car, or anything else useful in life, but I DO know the effing **pythagorean** theorem

Expand

10,800

Would be funny...if it wasn't so
heartbreaking.

#ihateschool



lcatalytics.com

What #hashtag best describes your schooling experience?

- a. #ihateschool
- b. #iloveschool*(really)
- c. #schoolisboring
- d. #schoolisnotpractical
- e. #mixedfeelings
- f. #other

Q. What keeps you
up at night?

A.

Q. What keeps you
up at night?

A.

Nothing.

ALL

A.

Nothing.

Fear of Alzheimer's

TWU

you

Q. What keeps
up at night?

Keeping

A int

Q. What keeps you
up at night?

Q. What
up at night?

A.

I LOVE YOU.

UNC

NCAT

Q. What
up at night?

Q. What keeps you

right?
Q. What keeps you
up at night?

How can I motivate

A.

A.

A.

student engagement

K-12

How
be
Q. What keeps you
at night?

Q. What
up at night?

Q. What keeps you
up at night?

A.

A.
How to continually challenge
students so they want to
learn more.
the

K-12

good grades

A.

How can I motivate

Q. What keeps you up at night?

Q. What keeps you up at night?

Q. What keeps you up at night?

Students with potential not succeeding.

UH Downtown

A.

How can
better

Q. What keeps you
up at night?

keeps you
night?

Q. What
up at night?

A.
How to make learning even
more interesting/enjoyable.

K-12

Q. What
up at night?

Q. What keeps you
up at night?

Q. What keeps you
up at night?

How can I motivate

A.

F

New ways to engage
students.

A.

K-12

How can I motivate

A.

F

A.

How to engage my students.

Chile

Q. What keeps you

Q. What keeps you
up at night?

Q. What
up at night?

How can I motivate

A.

F

A.

Desinteresse!!

Brazil

Q. What keeps you

Q. What keeps you
up at night?

Q. What
up at night?

How
be
Q. What keeps you
up at night?

Q. What
up at night?

you

A.

A.

How boring I am & how little
will be retained by the student.

Yale

Students and teachers want the same thing.

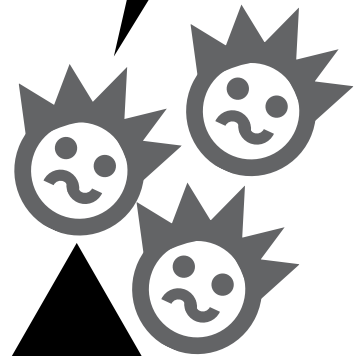
I want you
engaged!



I want you
engaged!



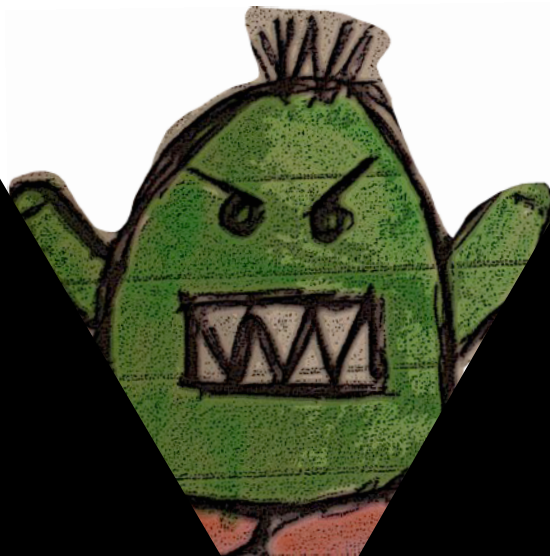
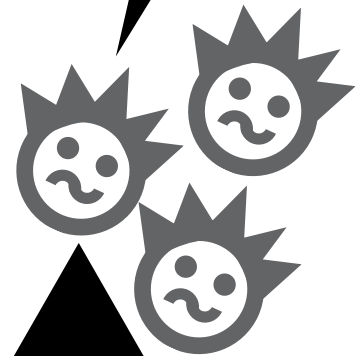
We
want to be
engaged!



I want you
engaged!



We
want to be
engaged!



Message



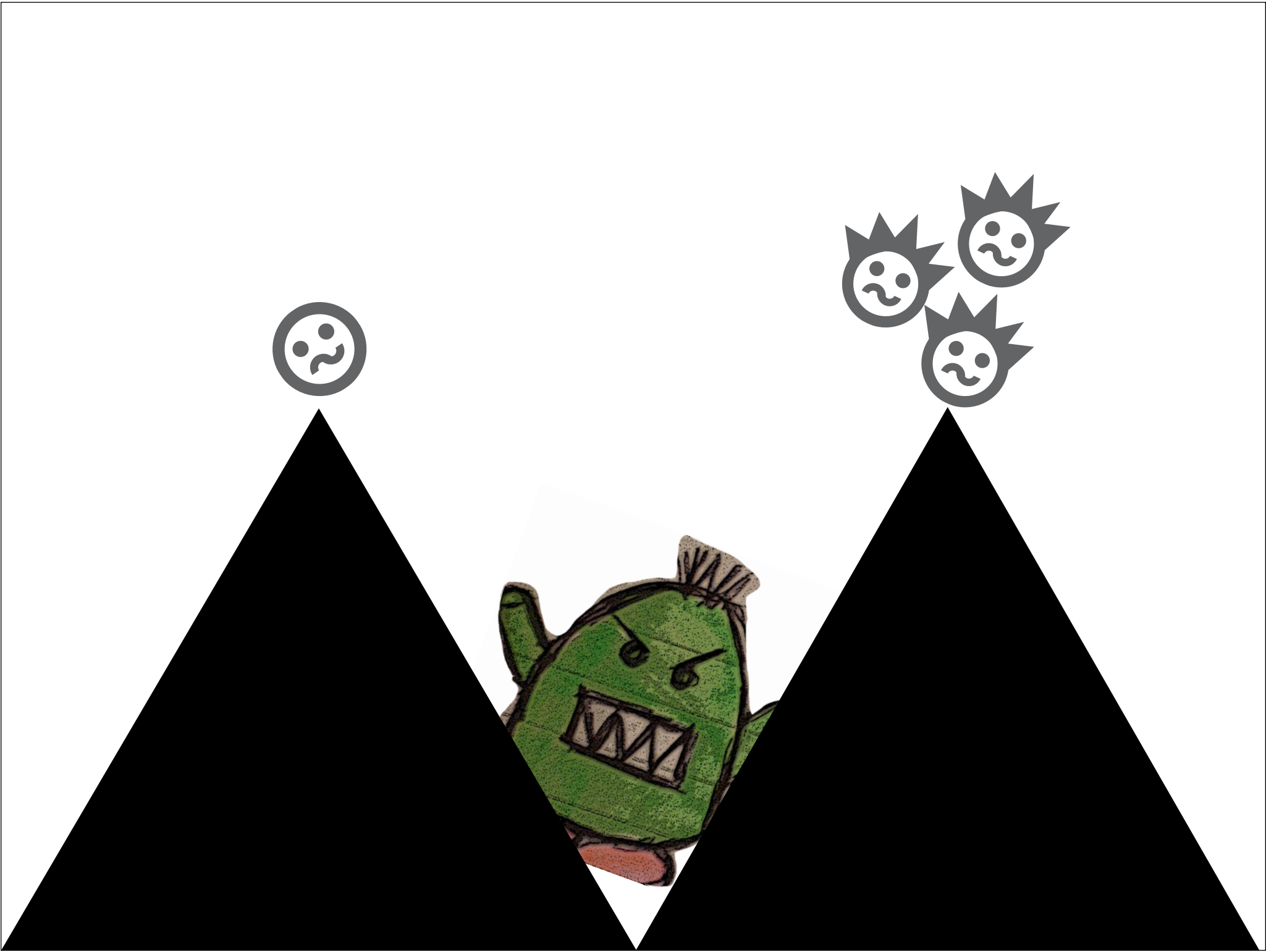
Education doesn't
have to be this
way.

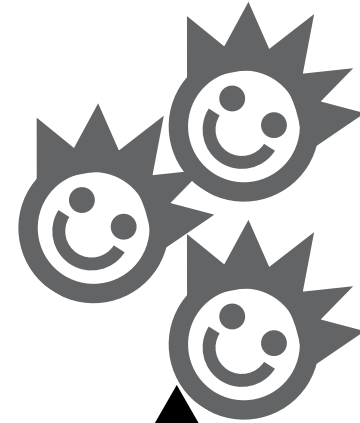
What's going on in this classroom?



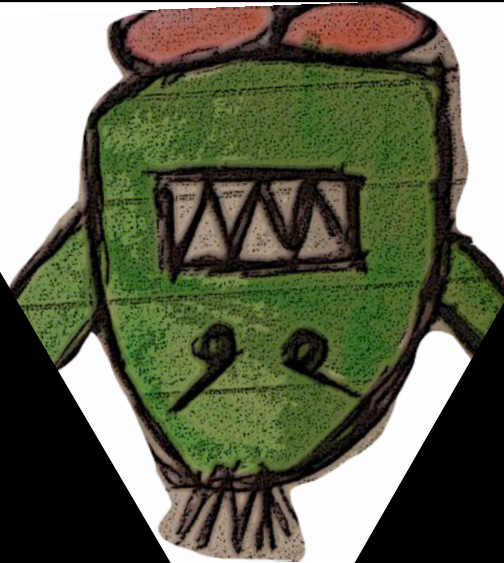
What's going on in this classroom?

- a. teacher left the room
- b. talking about dating
- c. working on a physics problem
- d. this isn't a classroom, it's a party





Flipped Classroom





"You see there is no ONE way to flip a class and in this lies one of the great strengths of this methodology"



It's not about the technology,
it's about the pedagogy.

1 innovative way to flip your class.

My goals

This doesn't
seem so bad.



My goals

This doesn't
seem so bad.



I've been doing
this for decades but
didn't know it.



My goals

This doesn't
seem so bad.



I've been doing
this for decades but
didn't know it.



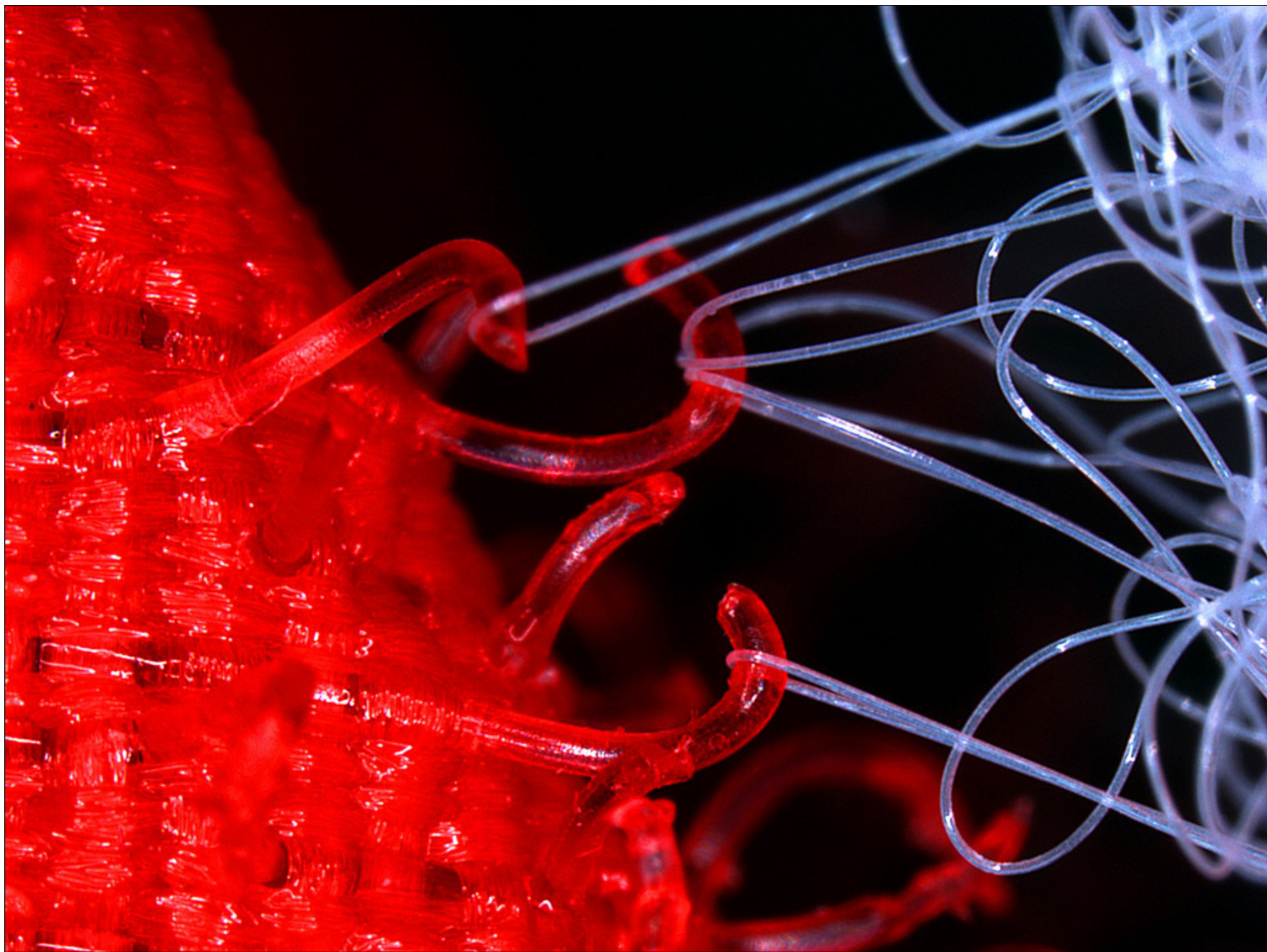
I'm going to
innovate and help
others.





How do I get my students to
do pre-class work?





**Study these letters, don't write them
down.**

Study these letters, don't write them down.

J FKFB INAT OUP SNA SAI RS

**Study these letters, don't write them
down.**

Study these letters, don't write them down.

J FKFB INAT OUP SNA SAI RS

**Study these letters, don't write them
down.**

Study these letters, don't write them down.

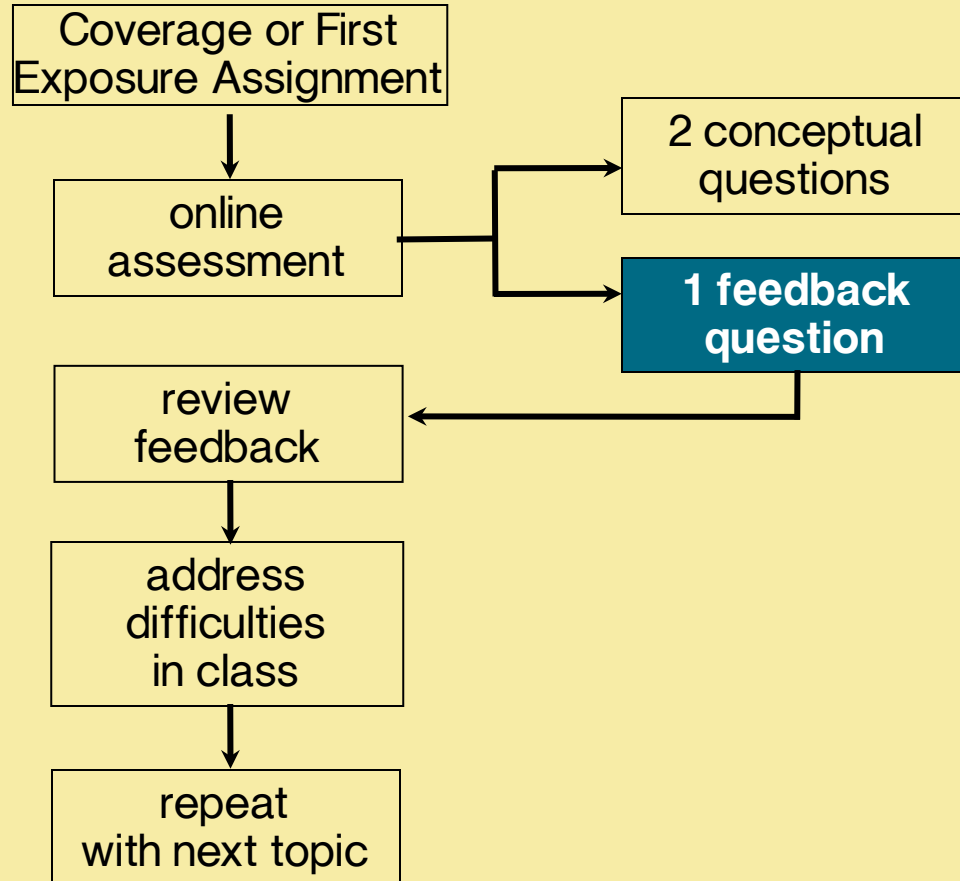
JFK FBI NATO UPS NASA IRS

Study these letters, don't write them down.

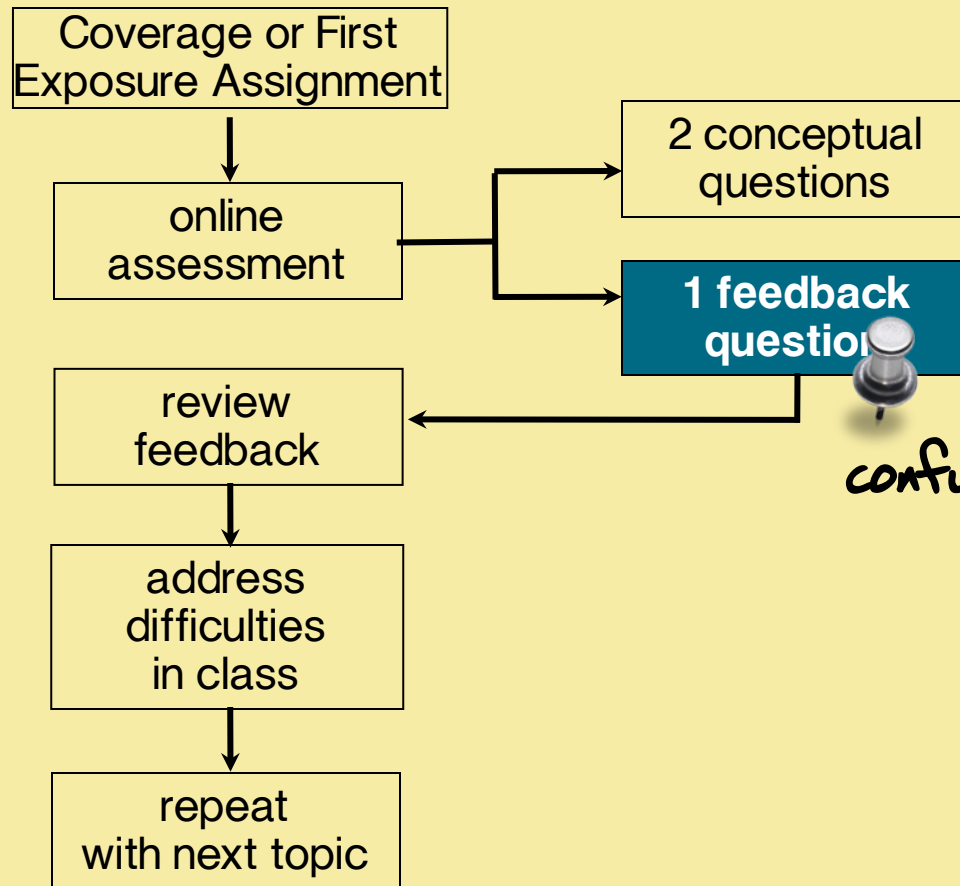
Study these letters, don't write them down.

JFK FBI NATO UPS NASA IRS

Just-in-Time Teaching



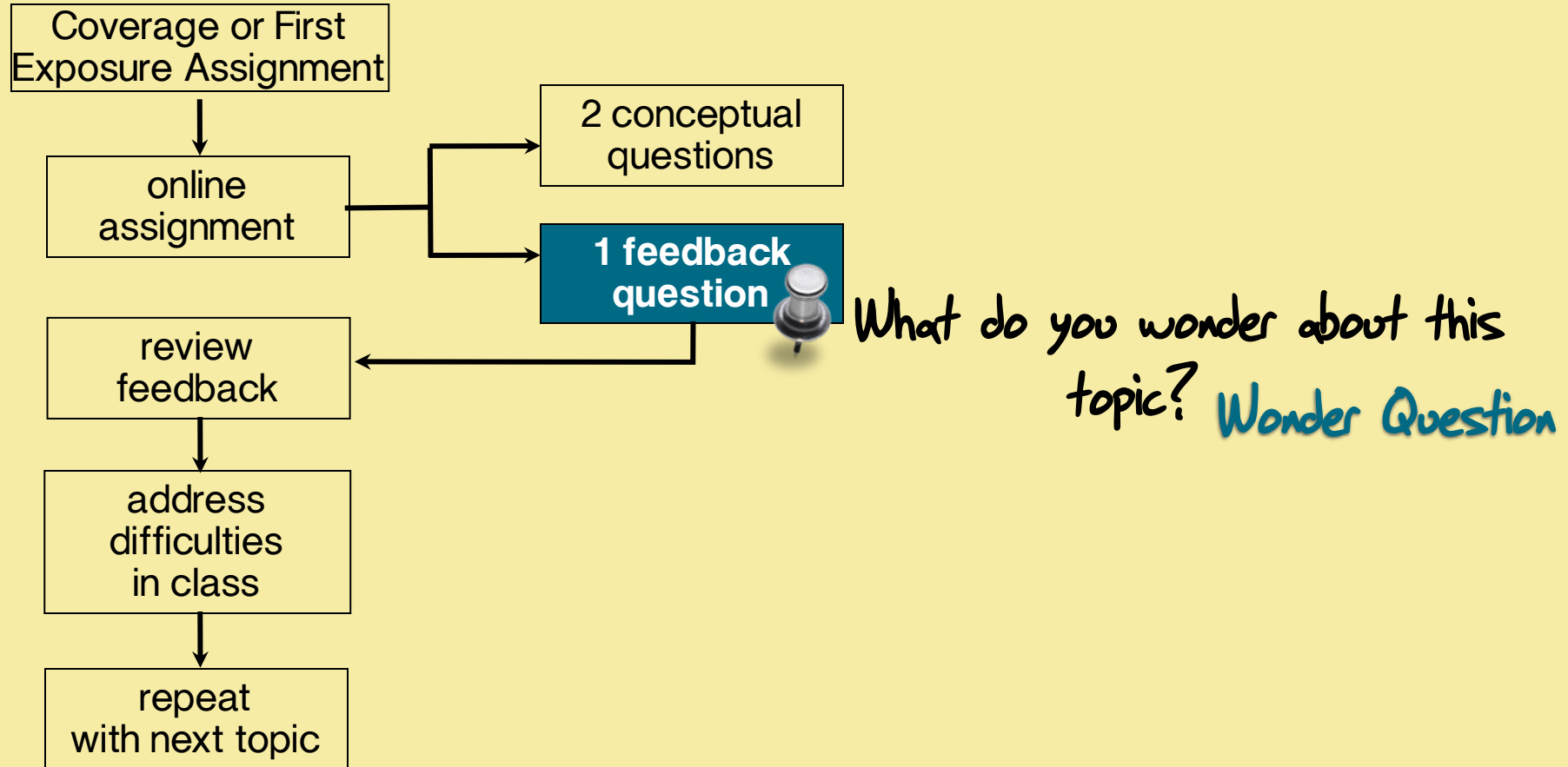
Just-in-Time Teaching



What do you find most
confusing about what you read?

Muddiest Point Technique

Just-in-Time Teaching



Pride and Prejudice



Pride & Prejudice (4/10) Movie CLIP - Refusi



movieclips

2011/06/16

Views: 107,705



MOVIECLIPS.COM

What is Collins' profession?

Hypothesize Collins' perception of the purpose of marriage.

What do you wonder about Collins' proposal?

Score for each question	Criteria (Students are asked to respond with an answer and a rationale for that answer)
0	Question is left blank or incomplete
1	Response includes an answer, but does not include any or includes only very minimal reasoning or rationale (regardless of correctness)
2	Response includes an answer AND reasoning or rationale (regardless of correctness)

Does the out-of-class assignment need to be a video?

Tips for JiTT

- give points for effort
- organize class time using feedback
- display comments anonymously
- formally assess content
- find a colleague doing it on campus

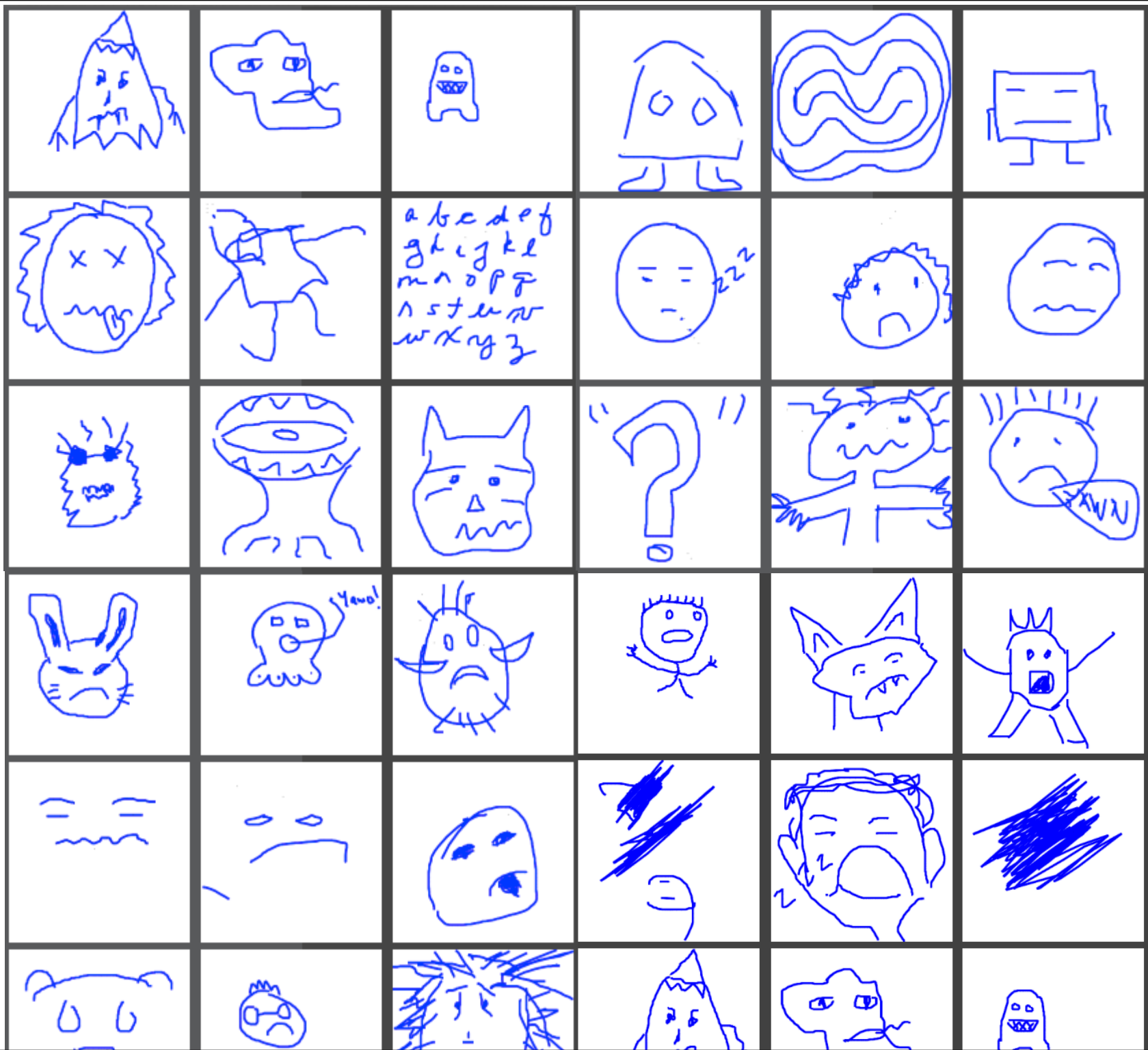


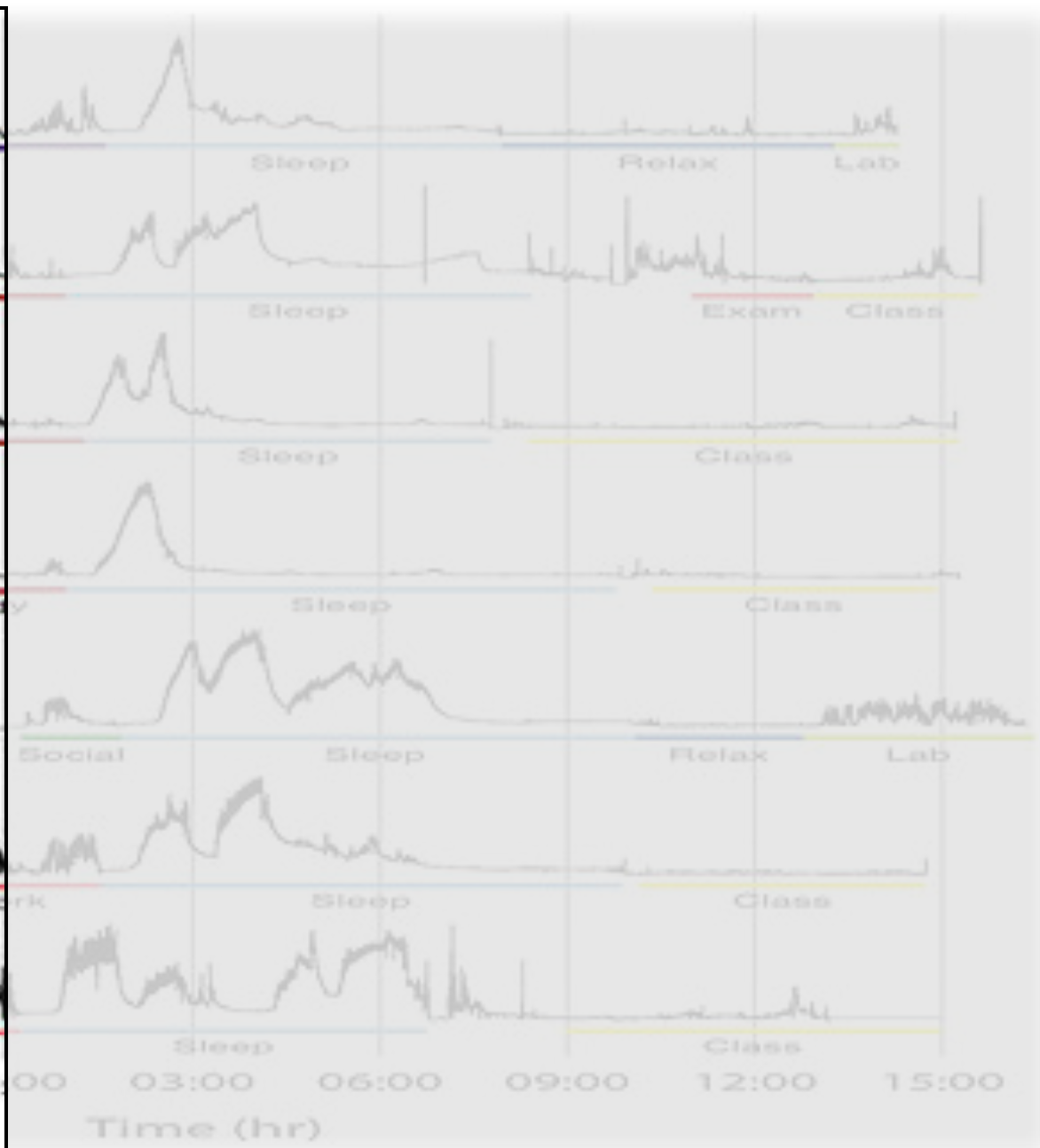
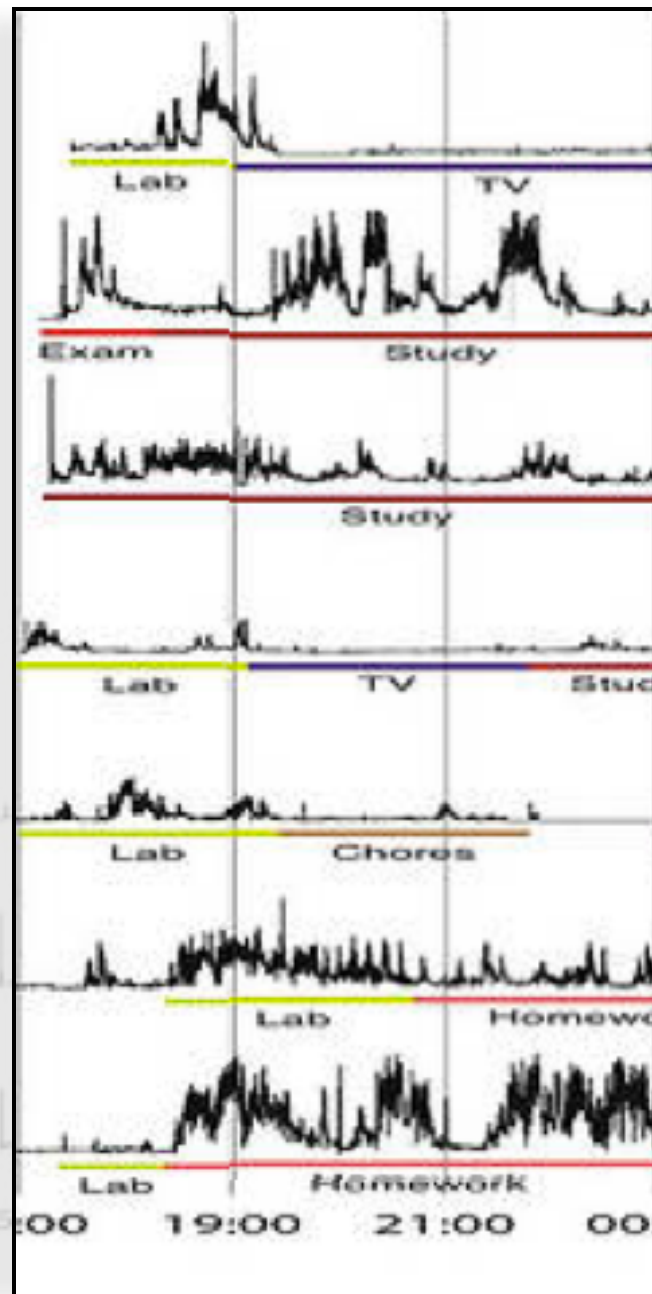
How do I engage my students
in class?

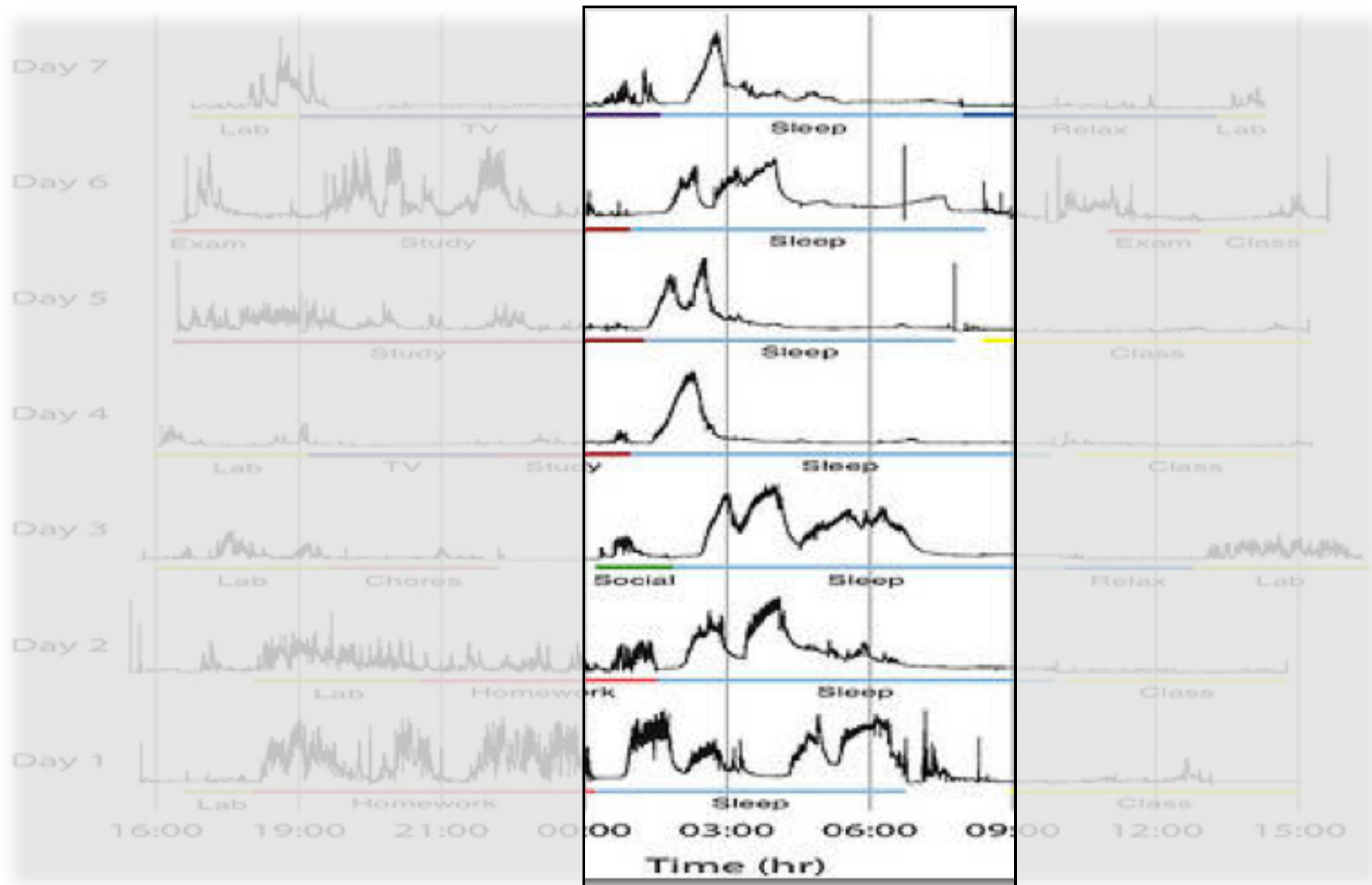


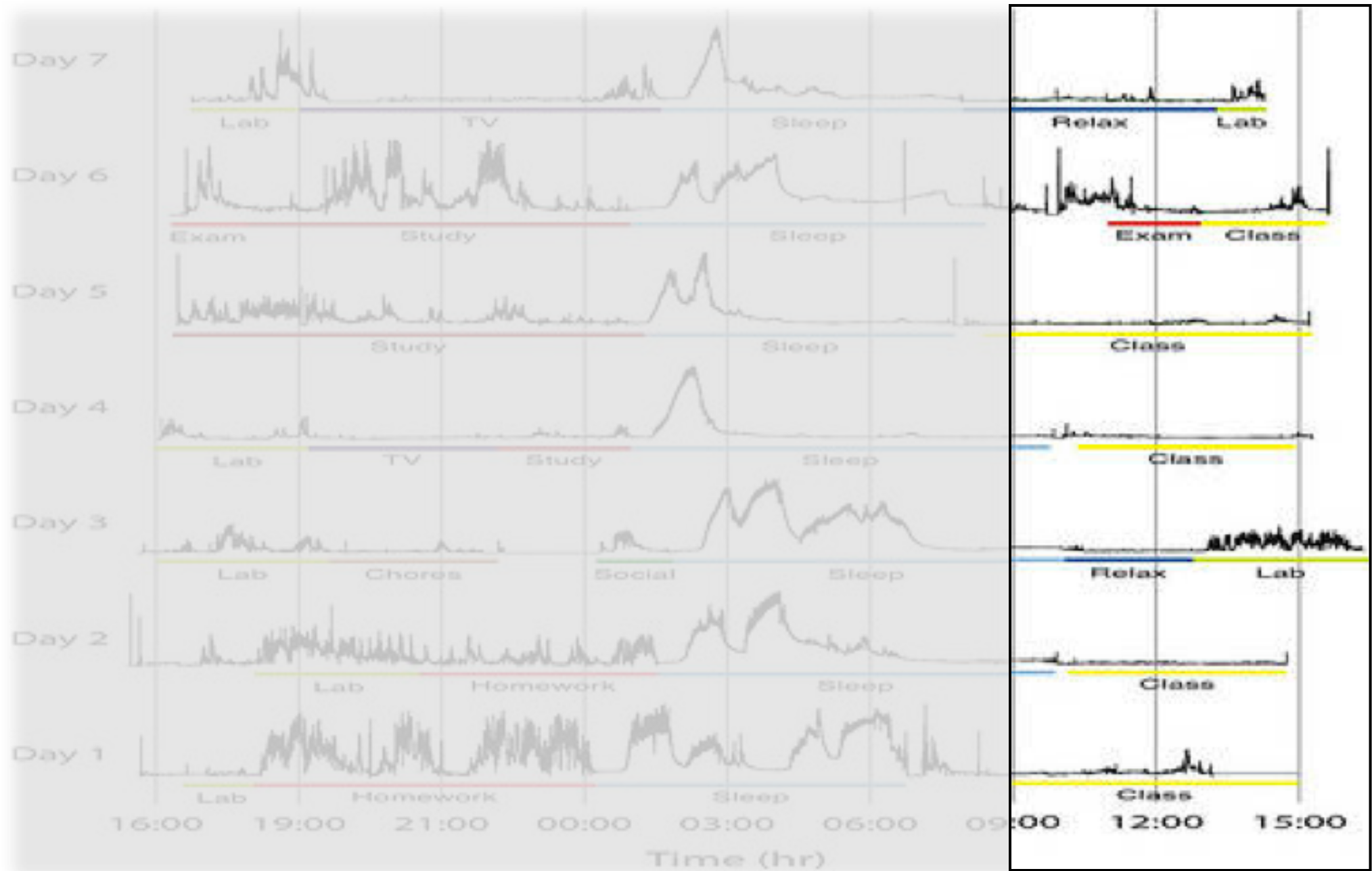
What does your boredom
monster look like?

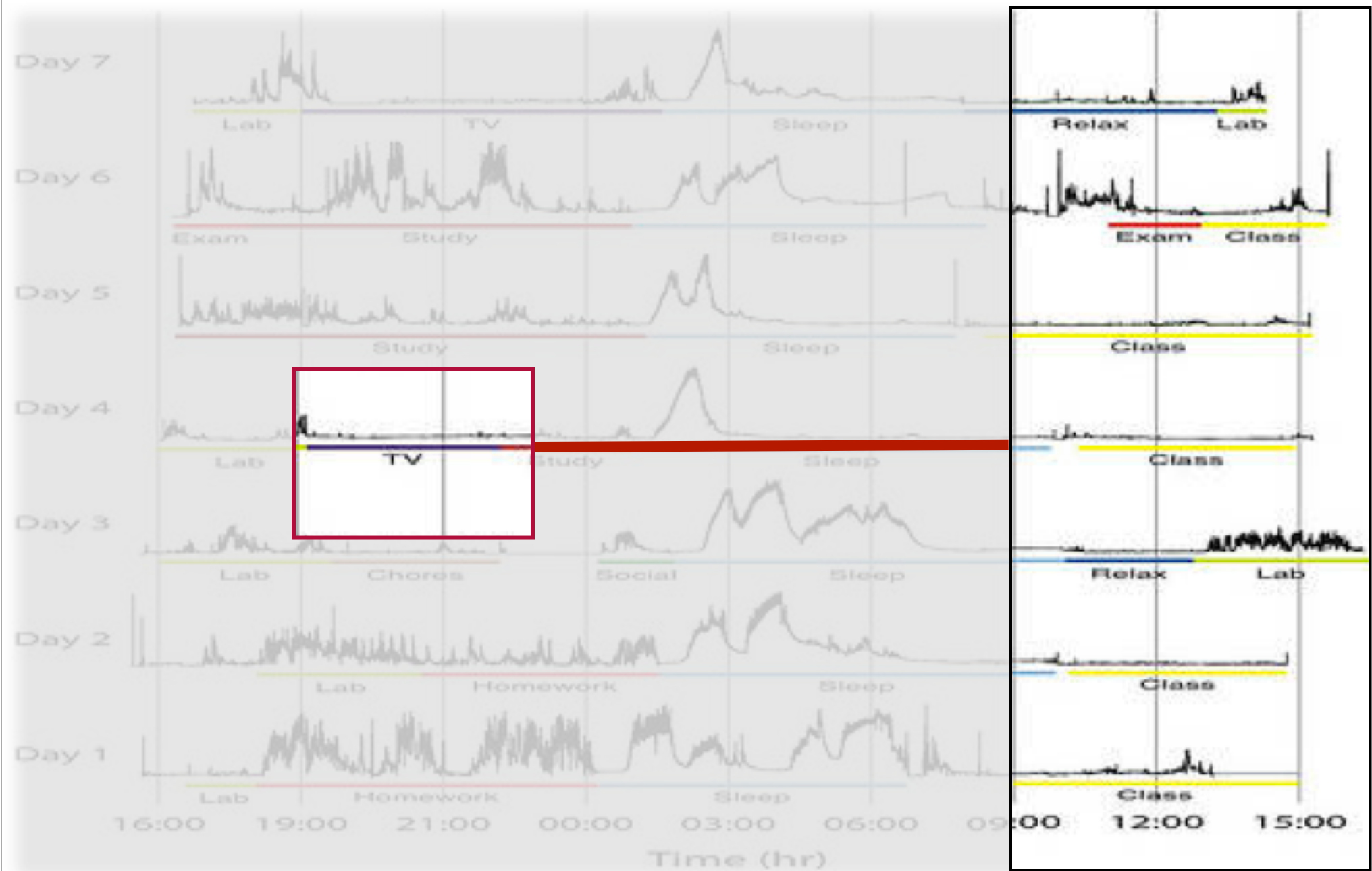




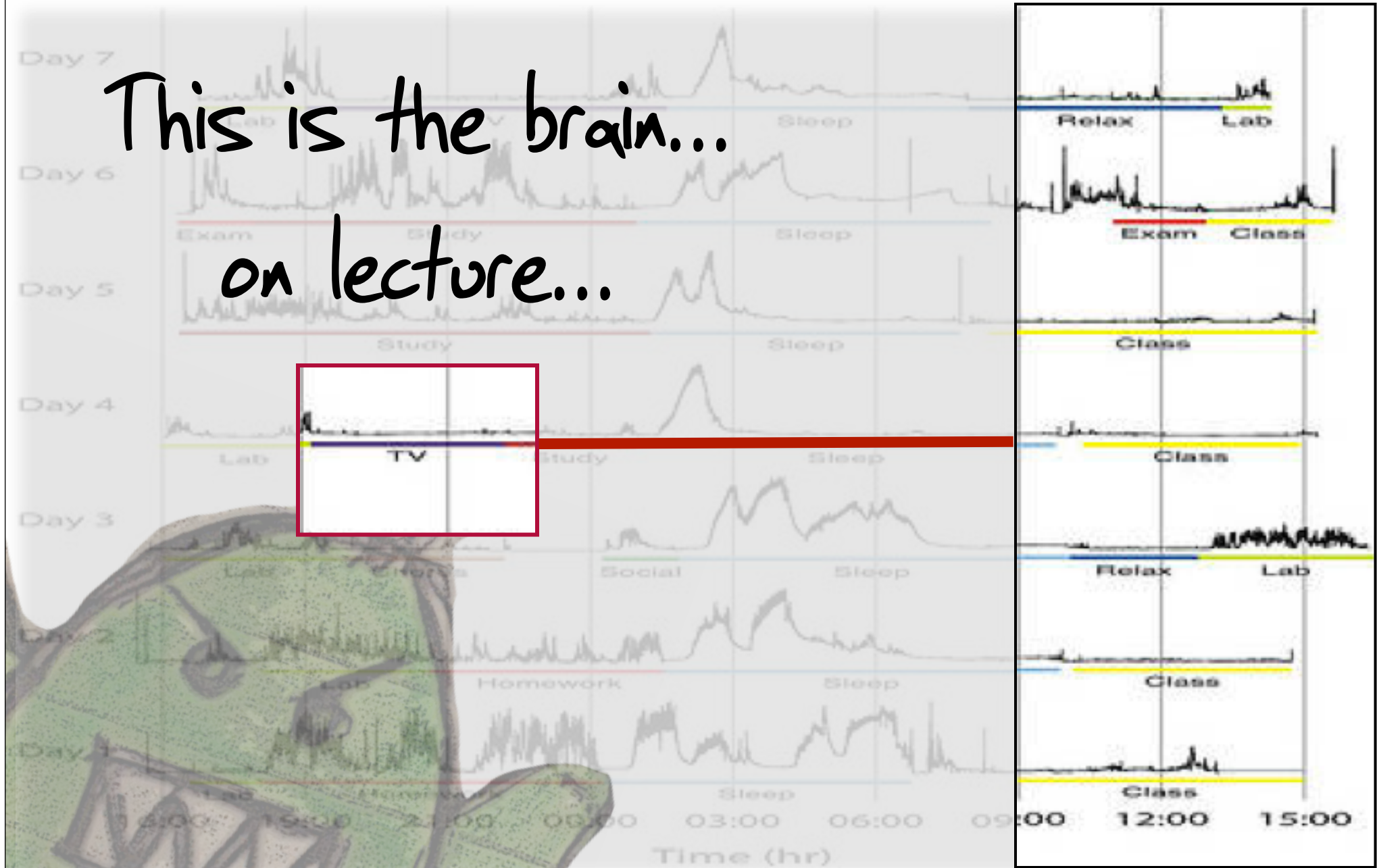




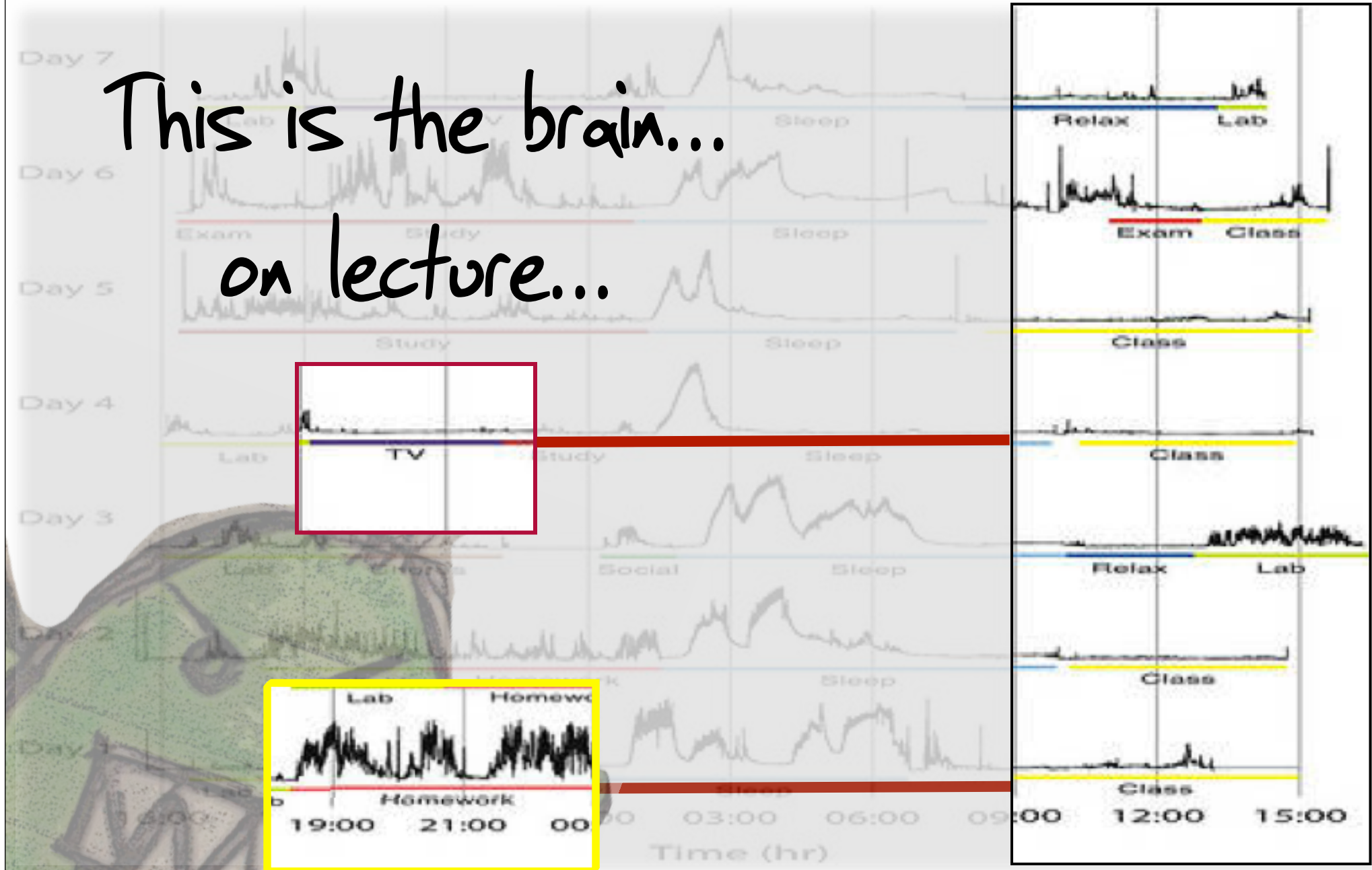




This is the brain...
on lecture...



This is the brain...
on lecture...



Bloom's Taxonomy

Traditional Arrangement						
Instructional Design	In-class		Out-of-class			
Bloom's Taxonomy	Remember	Understand	Apply	Analyze	Evaluate	Create

created by Josh Walker

Bloom's Taxonomy

Inverted "Flipped Classroom" Arrangement						
Instructional Design	Out-of-class		In-class			
Bloom's Taxonomy	Remember	Understand	Apply	Analyze	Evaluate	Create

created by Josh Walker

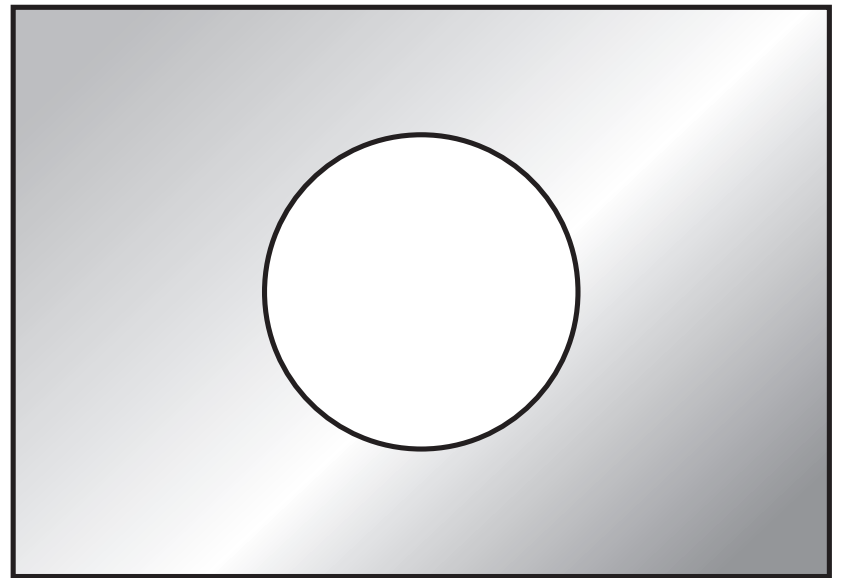
Thermal Expansion



When metals heat up, they expand.

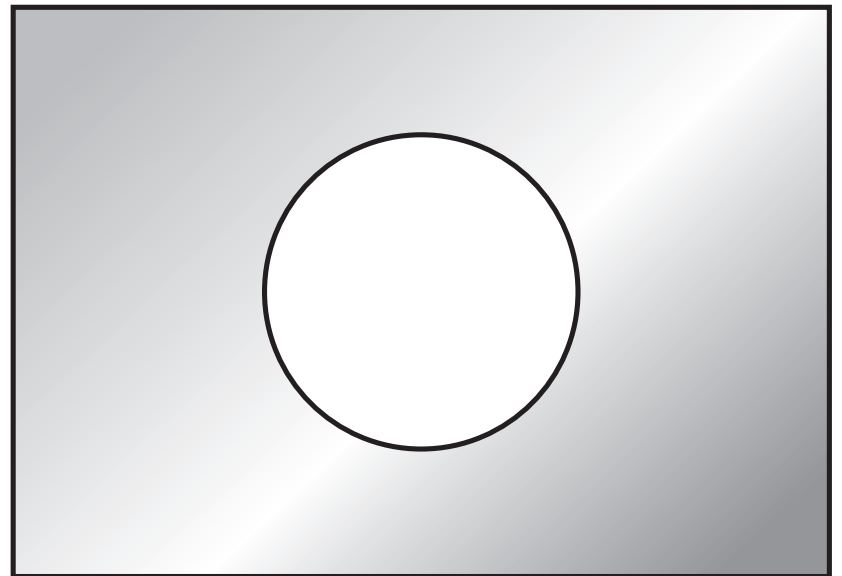
Consider a metal (aluminum) plate with a hole in it.

- A. increases**
- B. stays the same**
- C. decreases**



Consider a metal (aluminum) plate with a hole in it. If you heat the plate uniformly what happens to diameter of hole?

- A. increases**
- B. stays the same**
- C. decreases**



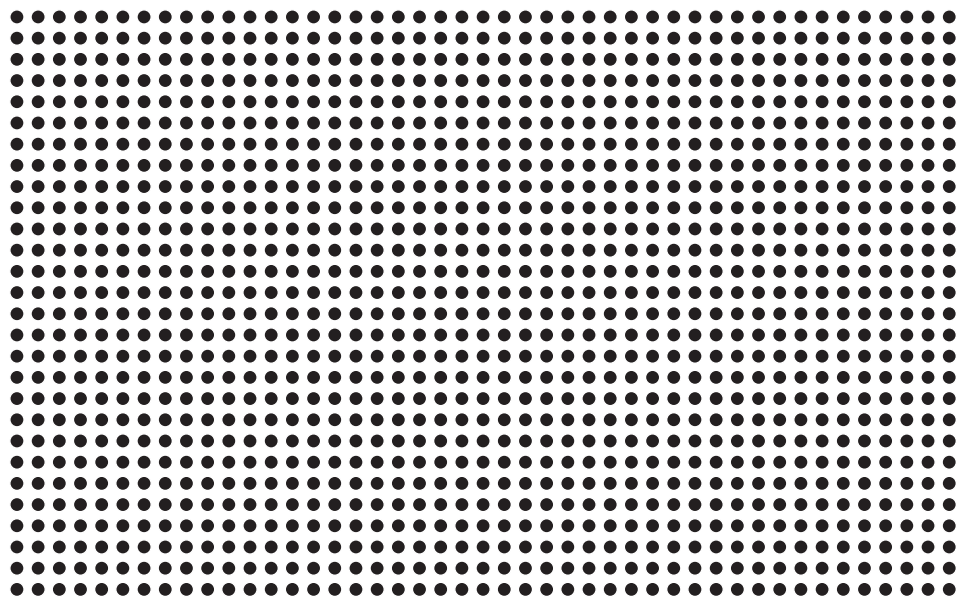
What just happened?

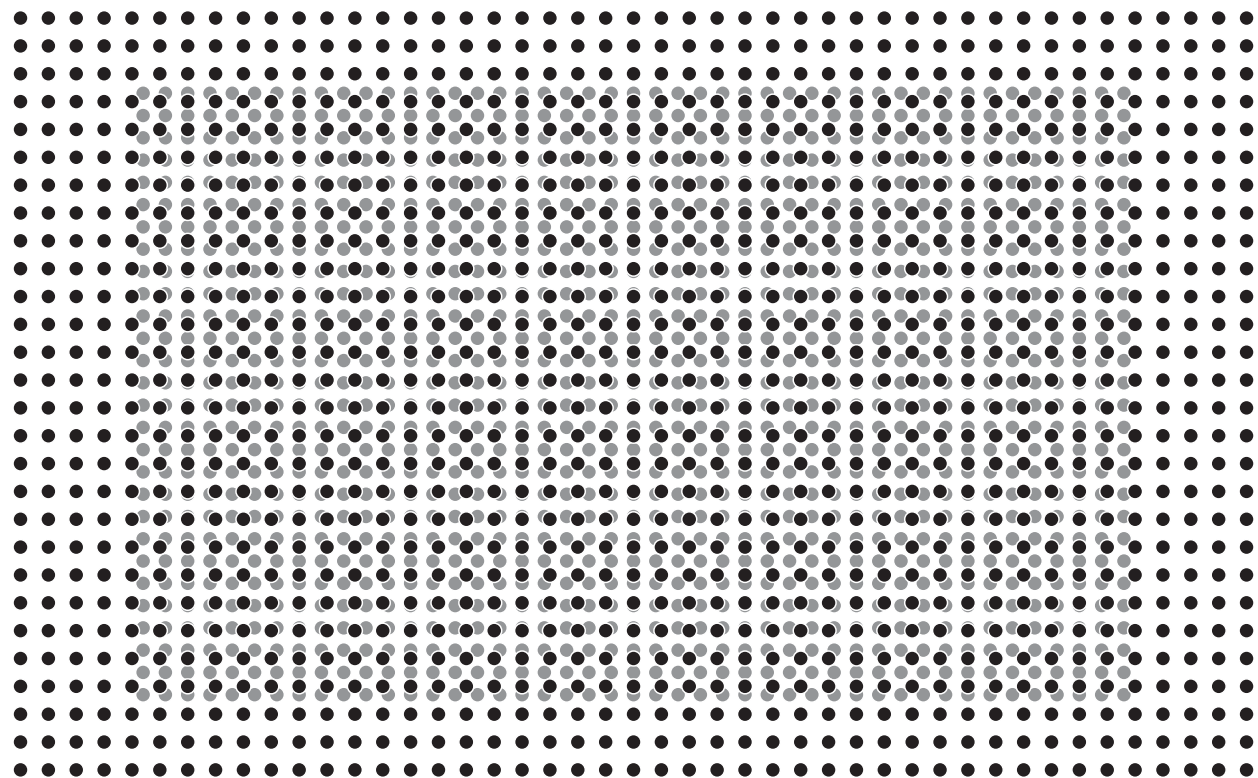
1. made a commitment, gained awareness of knowledge state

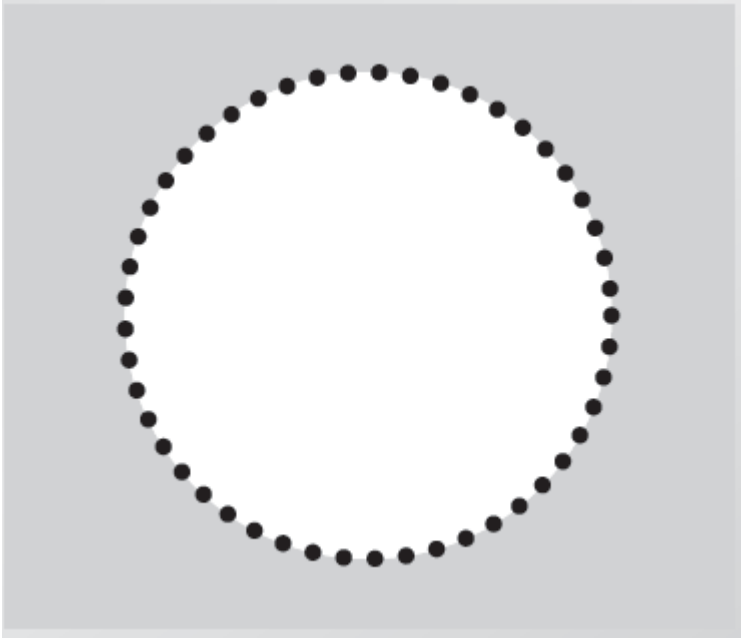
2. externalized your answer

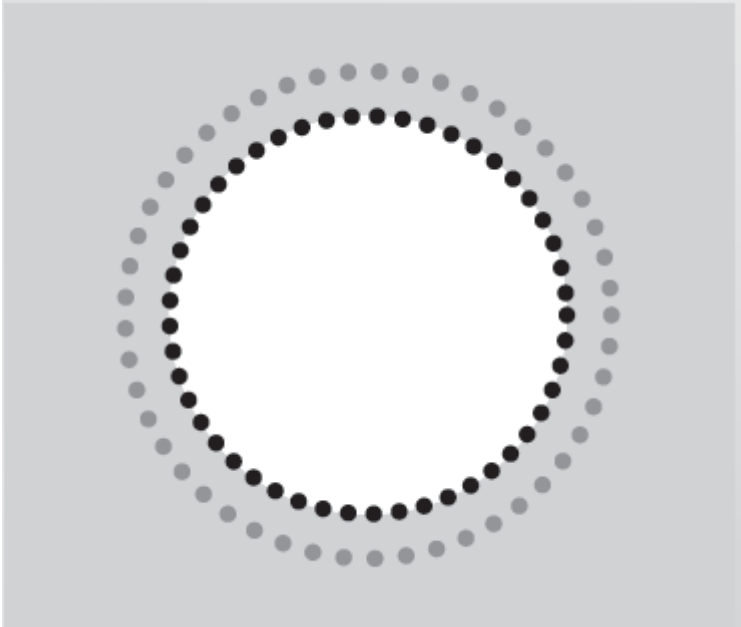
3. moved from the answer to reasoning

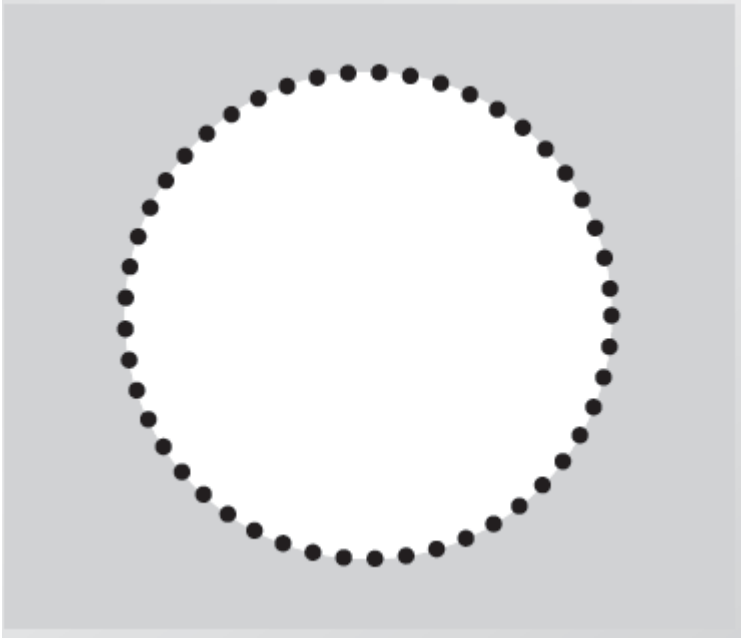
4. became emotionally invested in the learning process











What happens when you heat metals up?

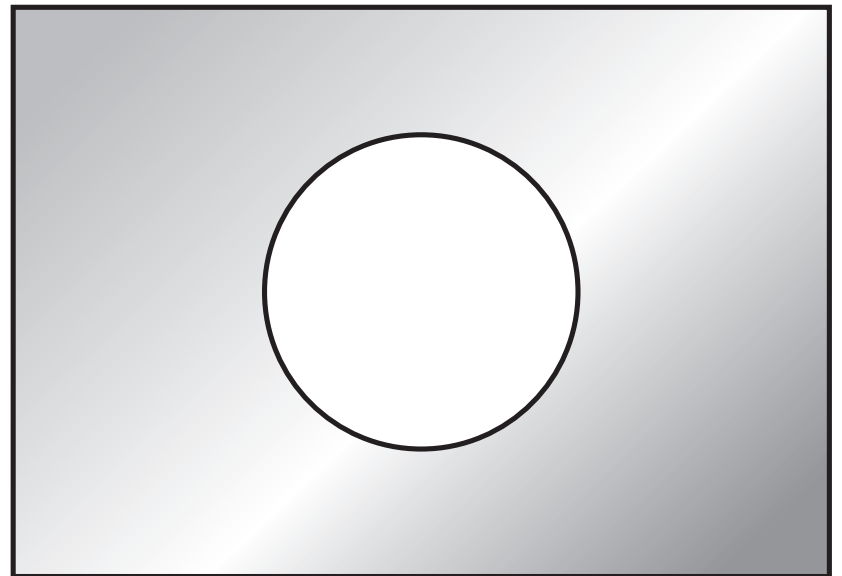
- A. they expand**
- B. they stay the same**
- C. they get smaller**
- D. who cares?**

If you heat it uniformly what happens to diameter of hole?

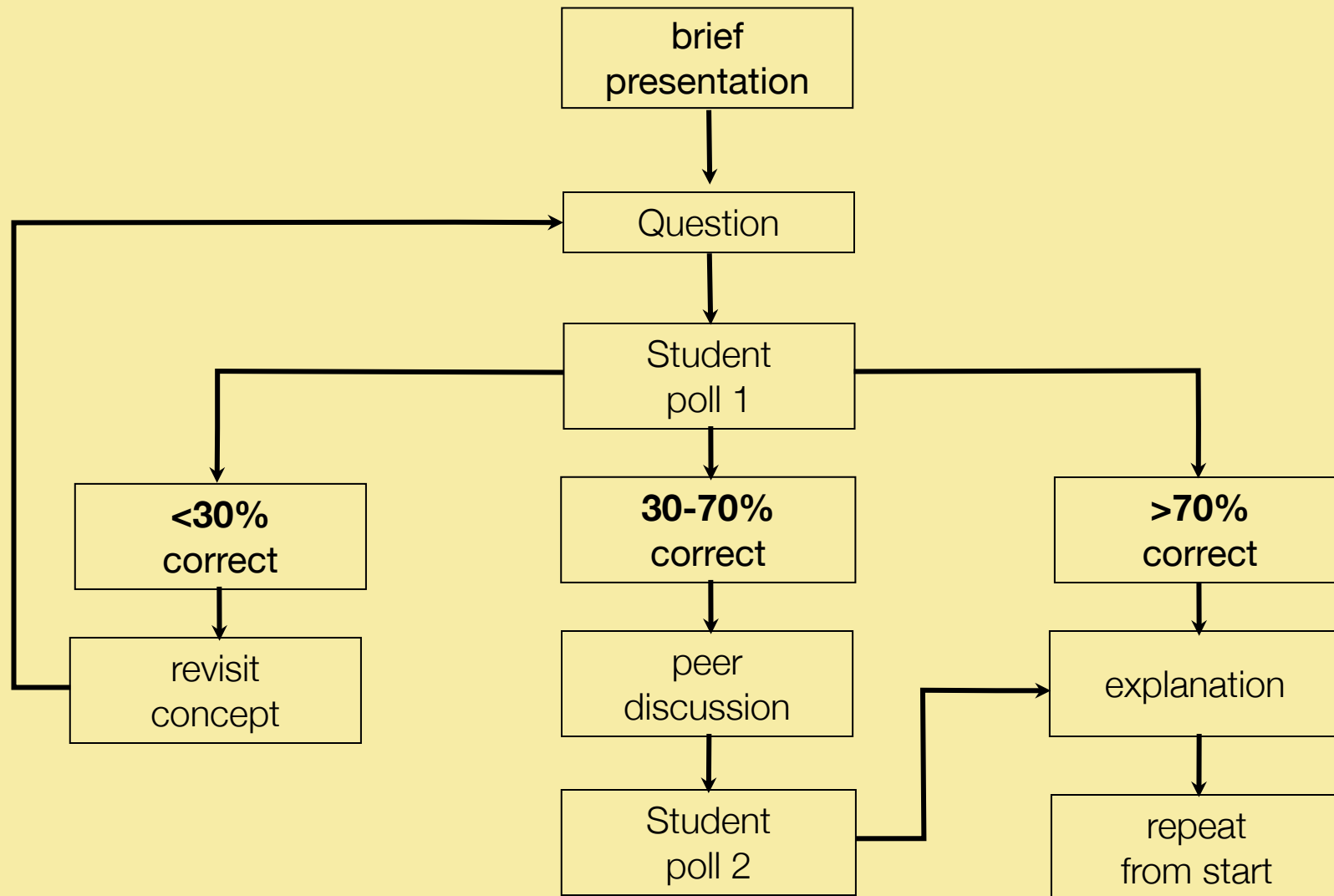
A. increases

B. stays the same

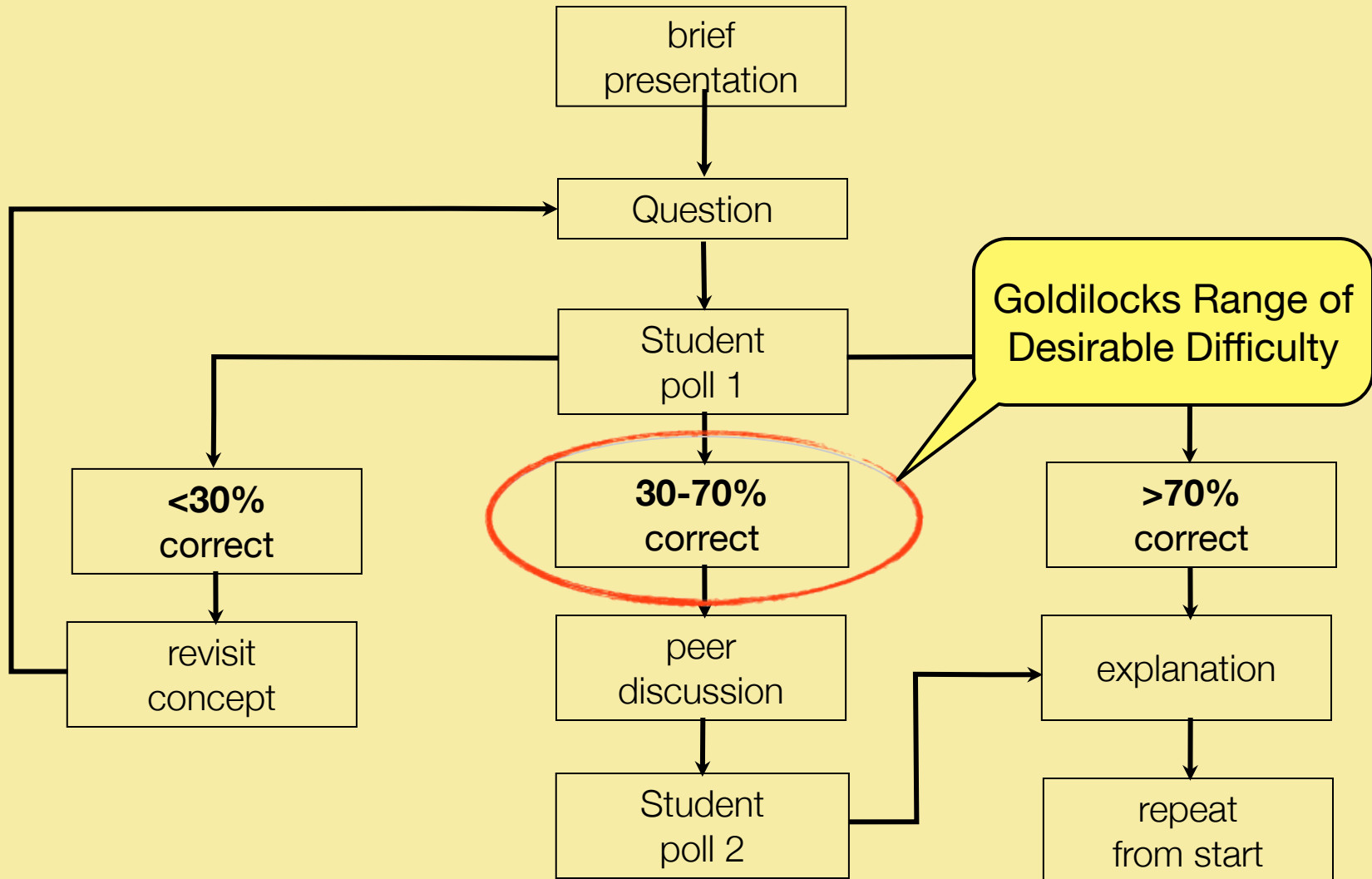
C. decreases



Peer Instruction



Peer Instruction



Moral Ambiguity



Gert's Moral Rules

1. Do not kill.
2. Do not cause pain.
3. Do not disable.
4. Do not deprive of freedom.
5. Do not deprive of pleasure.
6. Do not deceive.
7. Keep your promises.
8. Do not cheat.
9. Obey the law.
10. Do your duty.

Heinz's wife was near death, and her only hope was a drug that had been discovered by a pharmacist who was selling it for an exorbitant price. The drug cost \$20,000 to make, and the pharmacist was selling it for \$200,000. Heinz could only raise \$50,000 and insurance wouldn't make up the difference. He offered what he had to the pharmacist, and when his offer was rejected, Heinz said he would pay the rest later. Still the pharmacist refused. In desperation, Heinz broke into the store and stole the drug.

Should Heinz have broken into the store to steal the drug for his wife?

- 1. Yes**
- 2. No**

What if Heinz's child was sick, not his wife?

Should Heinz have broken into the store to steal the drug for his child?

- 1. Yes**
- 2. No**

What are alternatives to clickers?





A pink square containing the letter 'A' in a white, bold, sans-serif font with a black outline.

A

A green square containing the letter 'B' in a white, bold, sans-serif font with a black outline.

B

A yellow square containing the letter 'C' in a white, bold, sans-serif font with a black outline.

C

A blue square containing the letter 'D' in a white, bold, sans-serif font with a black outline.

D

<http://bit.ly/TgzlcQ>



<http://bit.ly/VnXtNS>

learning | catalytics

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current session: **766079** | 69 students

[Stop session](#) [Review results](#) [Seat map](#) [Show floating session ID](#) [Edit](#) [PDF](#) [Delete](#)

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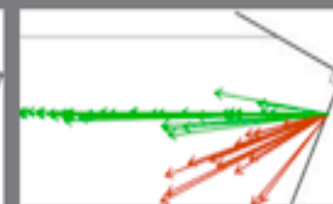
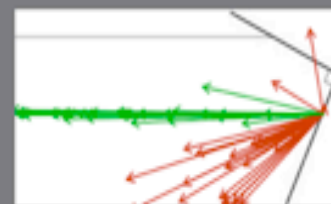


Light enters horizontally into the combination of two perpendicular

[Stop delivery](#) [Deliver again](#) [Assign groups](#) [Show all results](#)

Round 1
57 responses, 58% correct

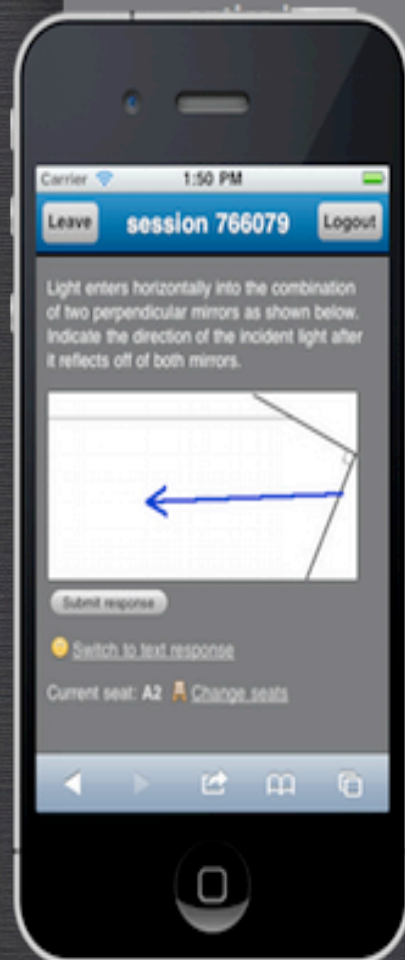
Round 2
51 responses, 73% correct



8 get it now
0 still don't get it

the incident light after it reflects off of both mirrors.

[feedback & support](#)



Socrative.com



Tips for PI

1

Tips for PI



6. Closure

6 basic
steps

Tips for PI

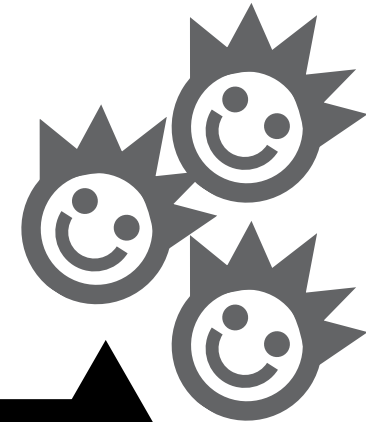


6. Closure

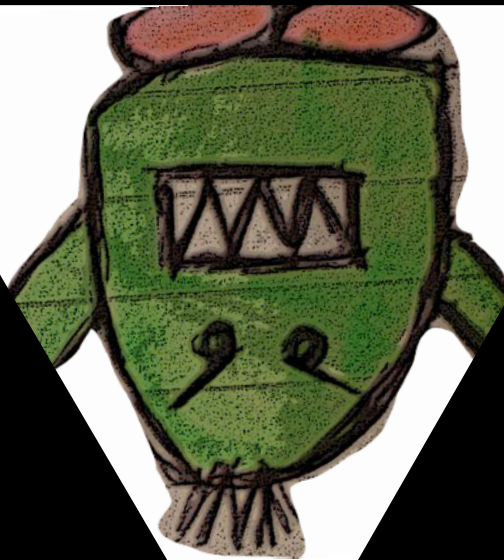




What do you want me to do, Julie?



FLIP with Peer Instruction



FLIP

F	Find a concept to flip
L	Lift coverage / first exposure out of class
I	Incentivize out of class work
P	Privilege application activities in class

hero

mentor





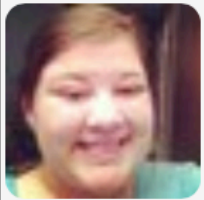
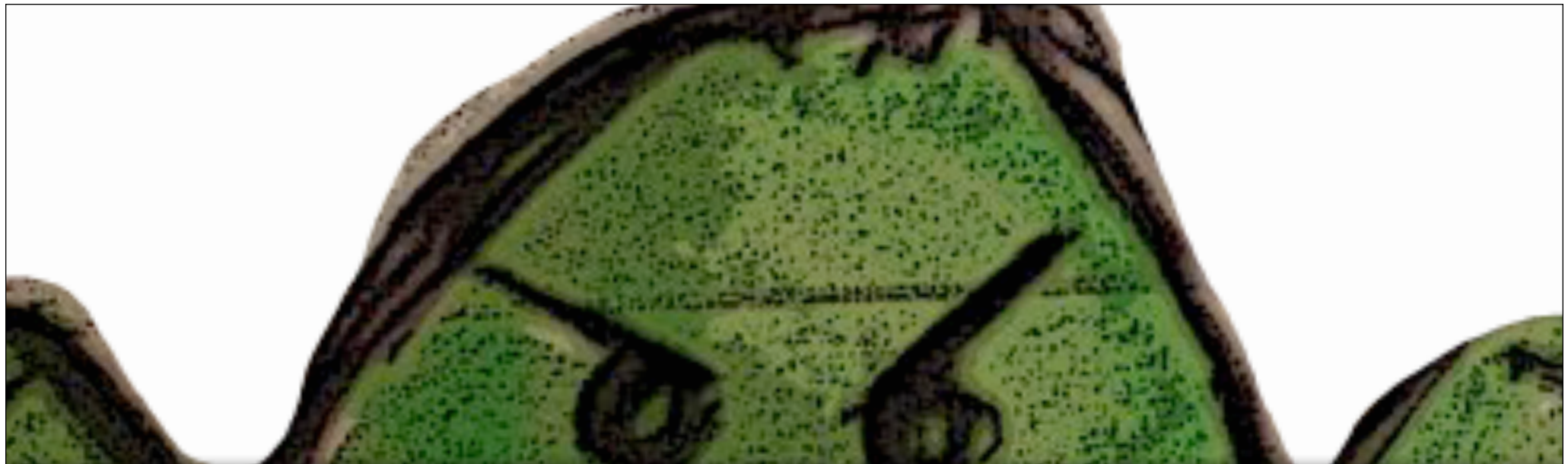
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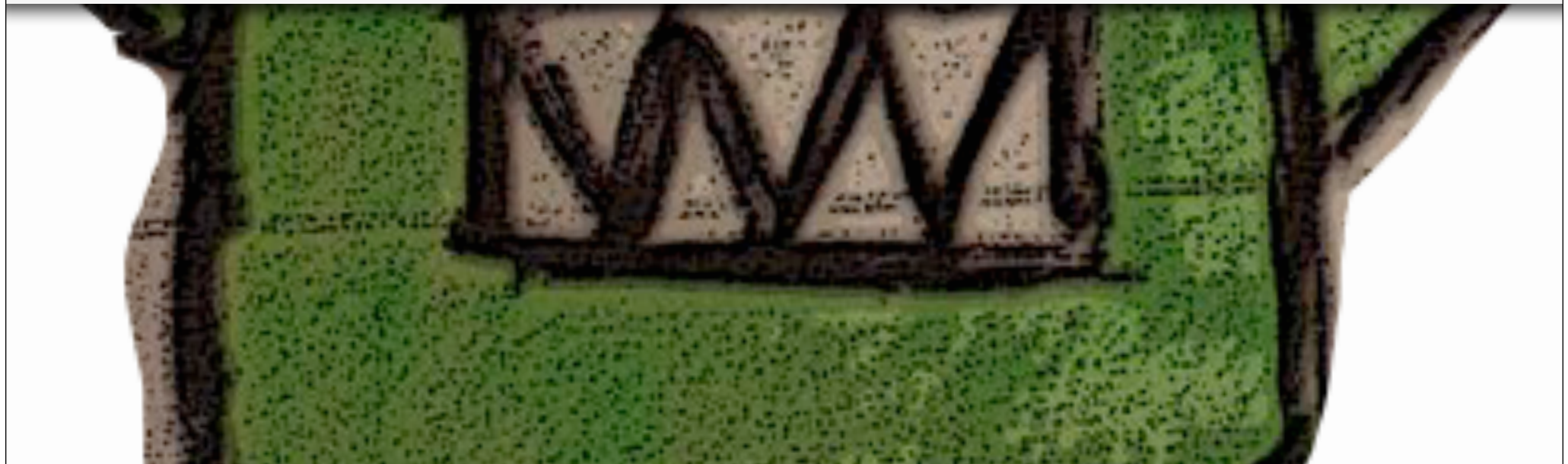


brianna girlie @bripaigegirlie

33 mins

I hate school. Ihateschool. I HATE school. I h8 school. I hate skool.
Ih8skool. I. hate. school. Eye h8 skool. I HATE SCHOOL. **#ihateschool**

Expand ← Reply ↻ Retweet ★ Favorite ... More





Tyson_Awesome @tegrinse614

6 hrs

today I developed my own proof for **pythagorean's** theorem. woooo
yeah baby **#genius**

Expand

Acknowledgements

PEOPLE

Eric Mazur

James Fraser

Ives Araújo

Cassandra Alvarado

Brian Lukoff

Jen Ebeler

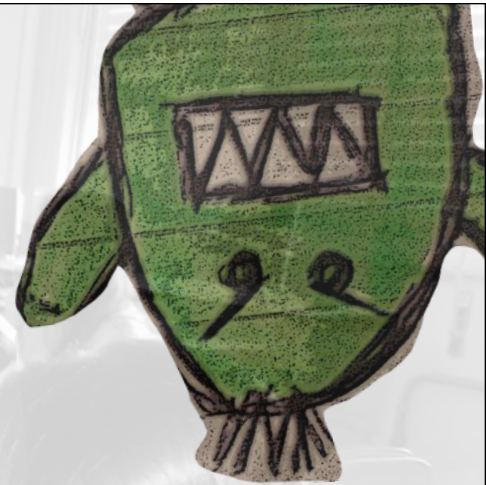
Nancy Duarte

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