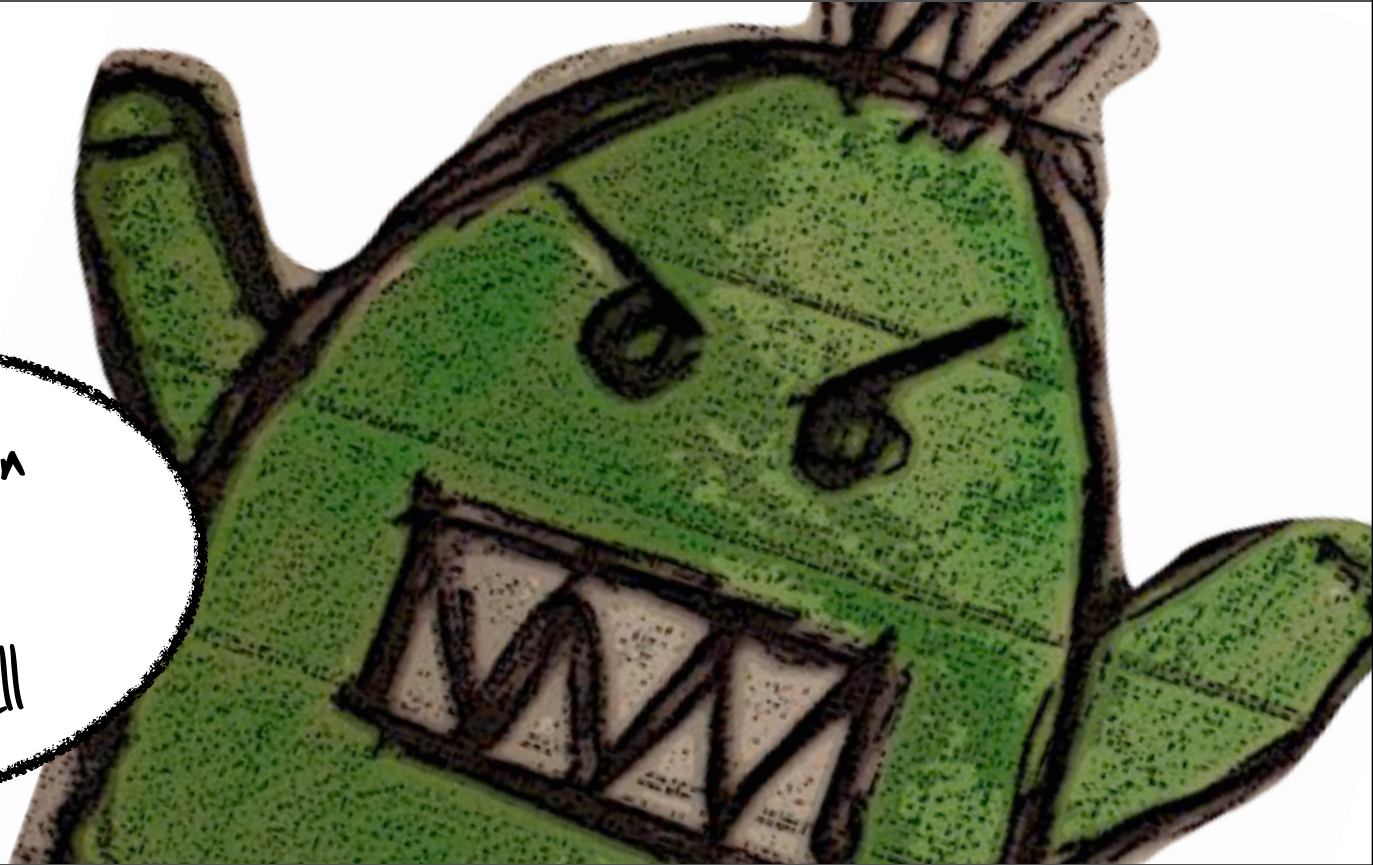


# How to help people learn

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

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

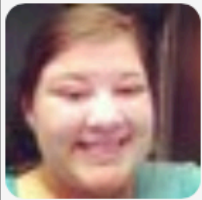


Julie Schell  
Sr. Educational Research Associate  
Mazur Group, Harvard University

CRAFT  
Austin, TX  
May 23, 2013





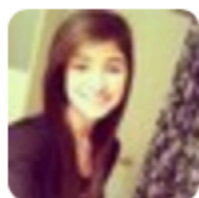


**brianna girlie** @bripaigegirlie

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**

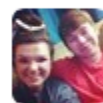
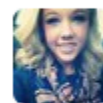
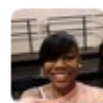
Collapse ↩ Reply ↻ Retweet ★ Favorite ⋮ More

**11**

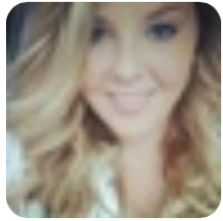
RETWEETS

**3**

FAVORITES





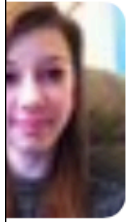


**Allison Newby** ♥ @allisonnewby13

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

**#ihateschool**

Expand



**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

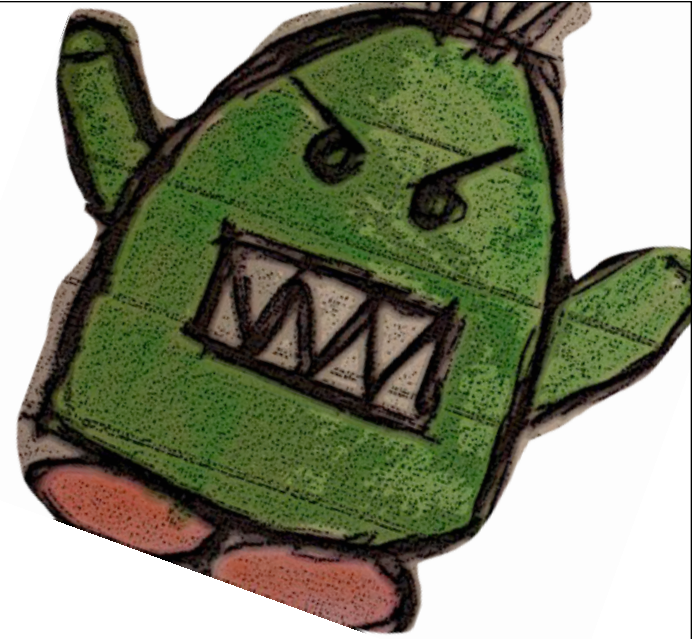
4h

School is so boring [#ihateschool](#)

Expand

---





**Kelly Chen** @pianokchen

School is so boring [#ihateschool](#)

Expand

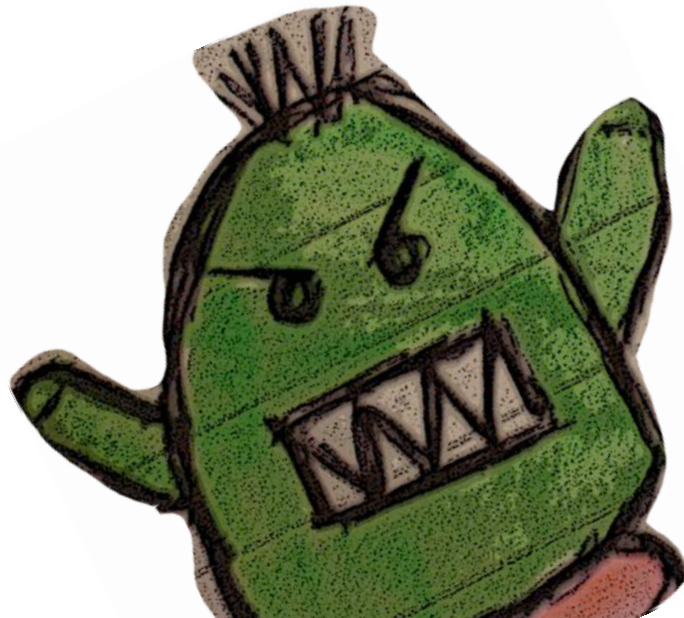
4h



**brookedlane** @brookedlane14

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

Expand





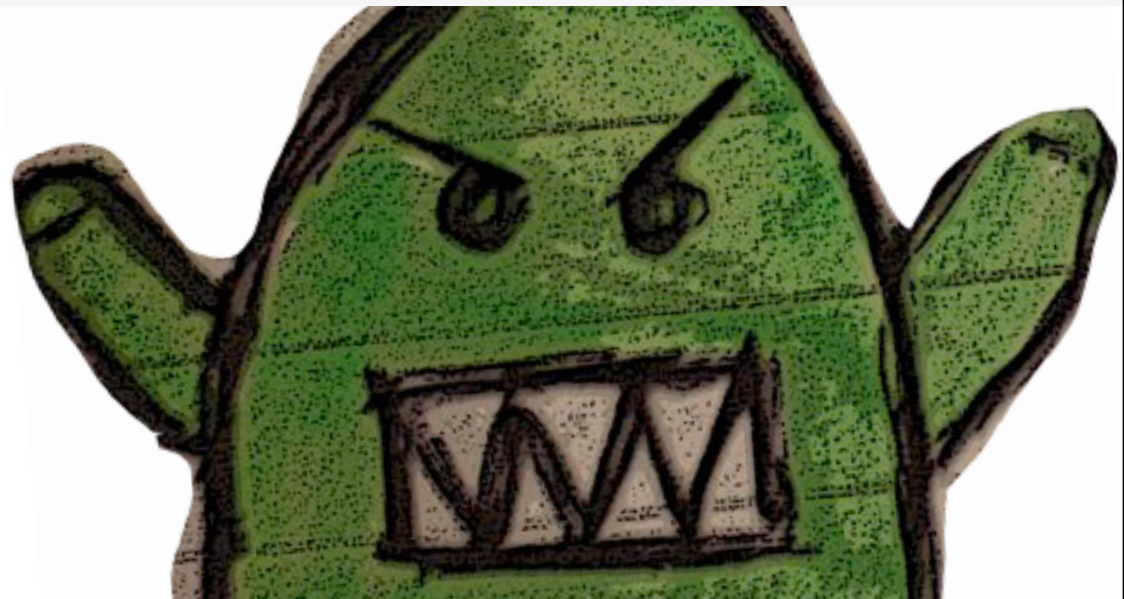


**Jessie Stockstad** @jessiestockstad

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

# What #hashtag best describes your schooling experience?

- a. #ihateschool
- b. #iloveschool\*(really)
- c. #schoolisboring
- d. #schoolisnotpractical
- e. (display back) #mixedfeelings



Q. What keeps you  
up at night?

A.

Q. What keeps you  
up at night?

A.

Nothing, I sleep well.

K-12

A.

Nothing.

I LOVE YOU

you

Q. What keeps  
up at night?

North  
Carolina

Keeping

A int

Q. What keeps you  
up at night?

Q. What  
up at night?

A.

student engagement

K-12

NCAT

Q. What  
up at night?

Q. What keeps you

Q. What keeps you  
up at night?

How can I motivate

A.

A.

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

A.

Fresno  
K-12



A.

How can I motivate...

How to make learning even more interesting/enjoyable.

K-12

Q. What keeps you up at night?

Q. What keeps you up at night?

Q. What keeps you up at night?

A.

New ways to engage  
students.

K-12

How can I  
better

Q. What keeps you  
up at night?

keeps you  
right?

Q. What  
up at night?

How can I motivate myself?

A.

F

A.

Being Boring....

Oklahoma State University

Q. What keeps you up at night?

Q. What keeps you up at night?

Q. What keeps you 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.

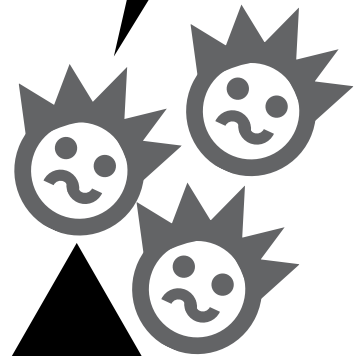
I want you  
engaged!



I want you  
engaged!



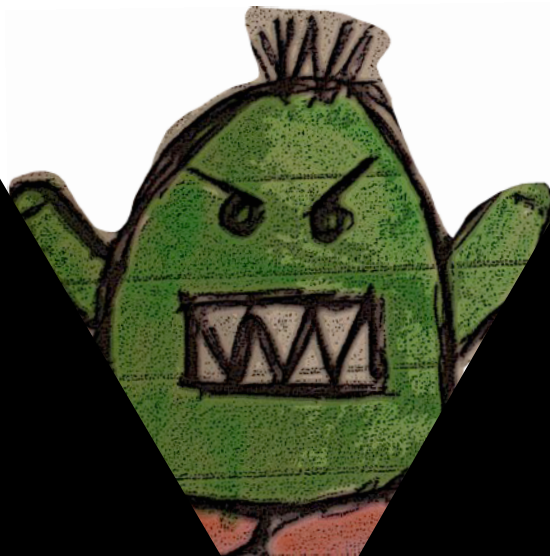
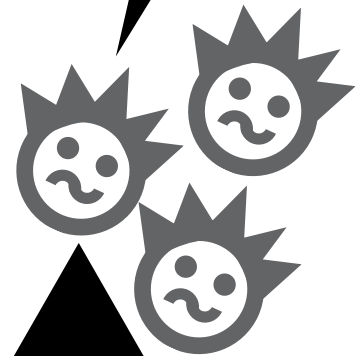
We  
want to be  
engaged!



I want you  
engaged!



We  
want to be  
engaged!

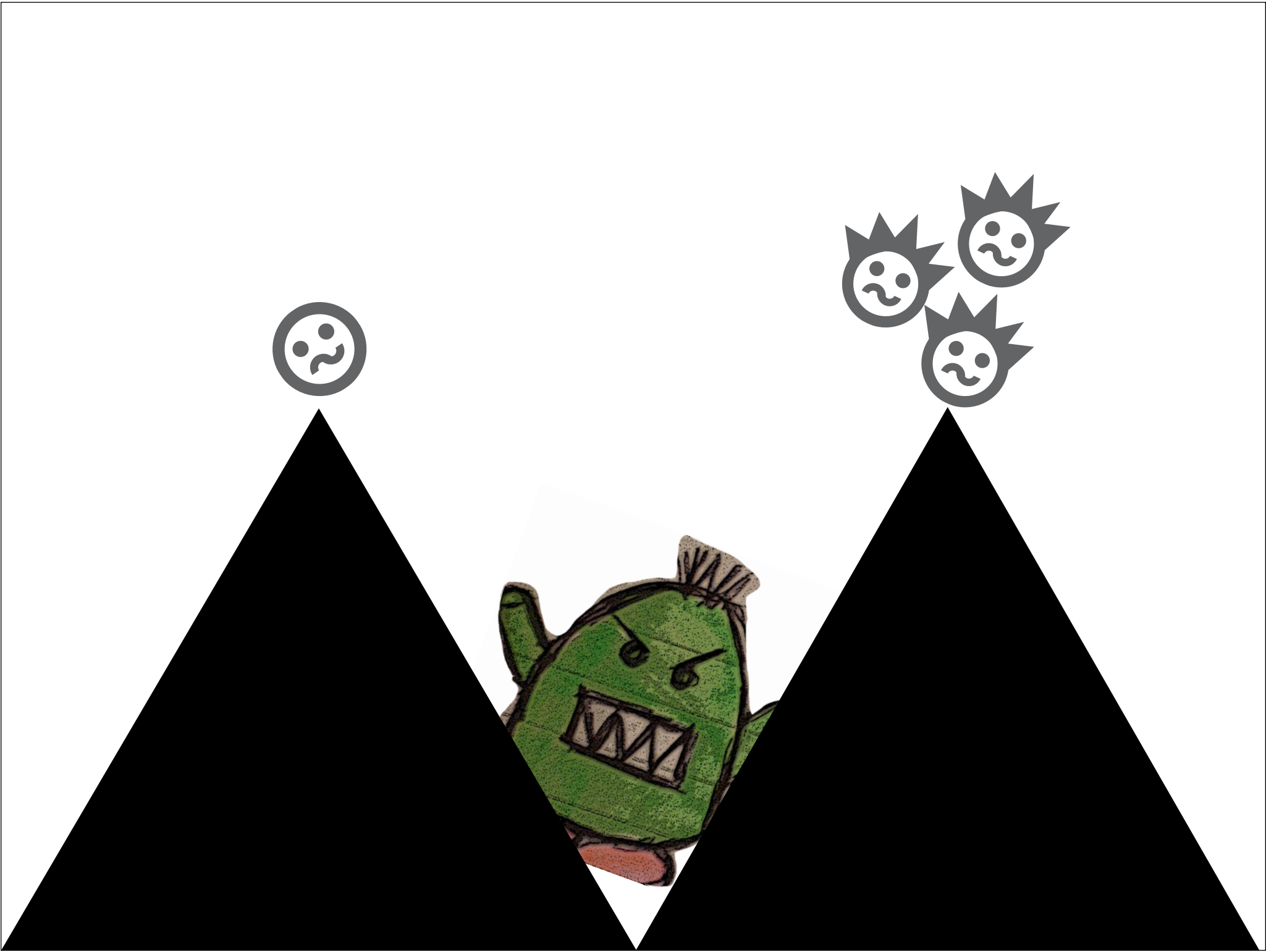


# Message



Education doesn't  
have to be this  
way.





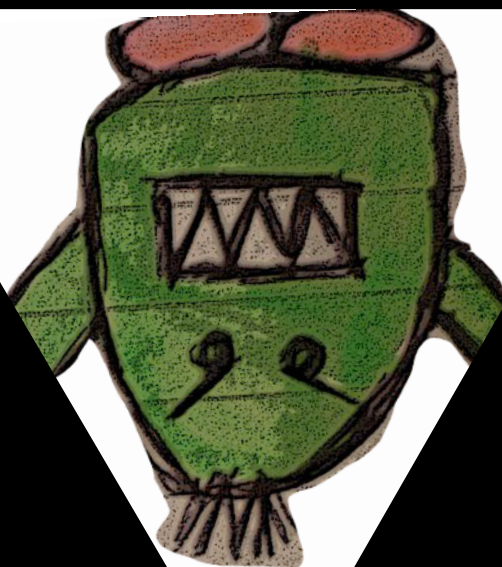
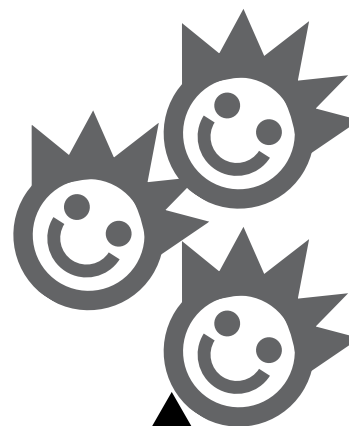


Boredom

Monster







# My goals

Learn 3 tips



# My goals

Learn 3 tips



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



# My goals

Learn 3 tips



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

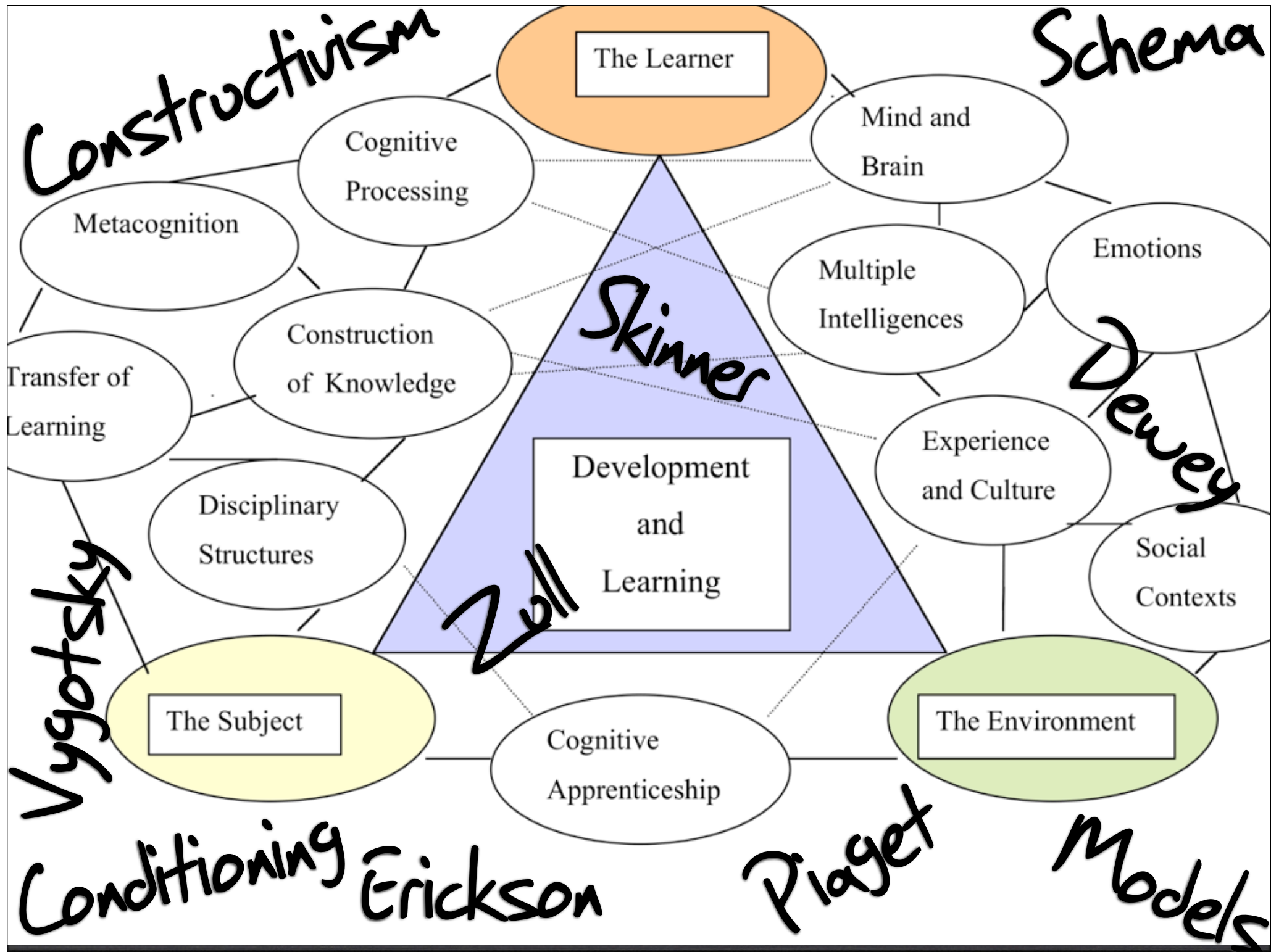


I'm going to  
do more and help  
others.





What is learning?



# Learning

Prior Knowledge  $\times$  New Information

=

Changes in  
Prior Knowledge

3

tips for helping people learn



CHUNK IT

# Traditional Method

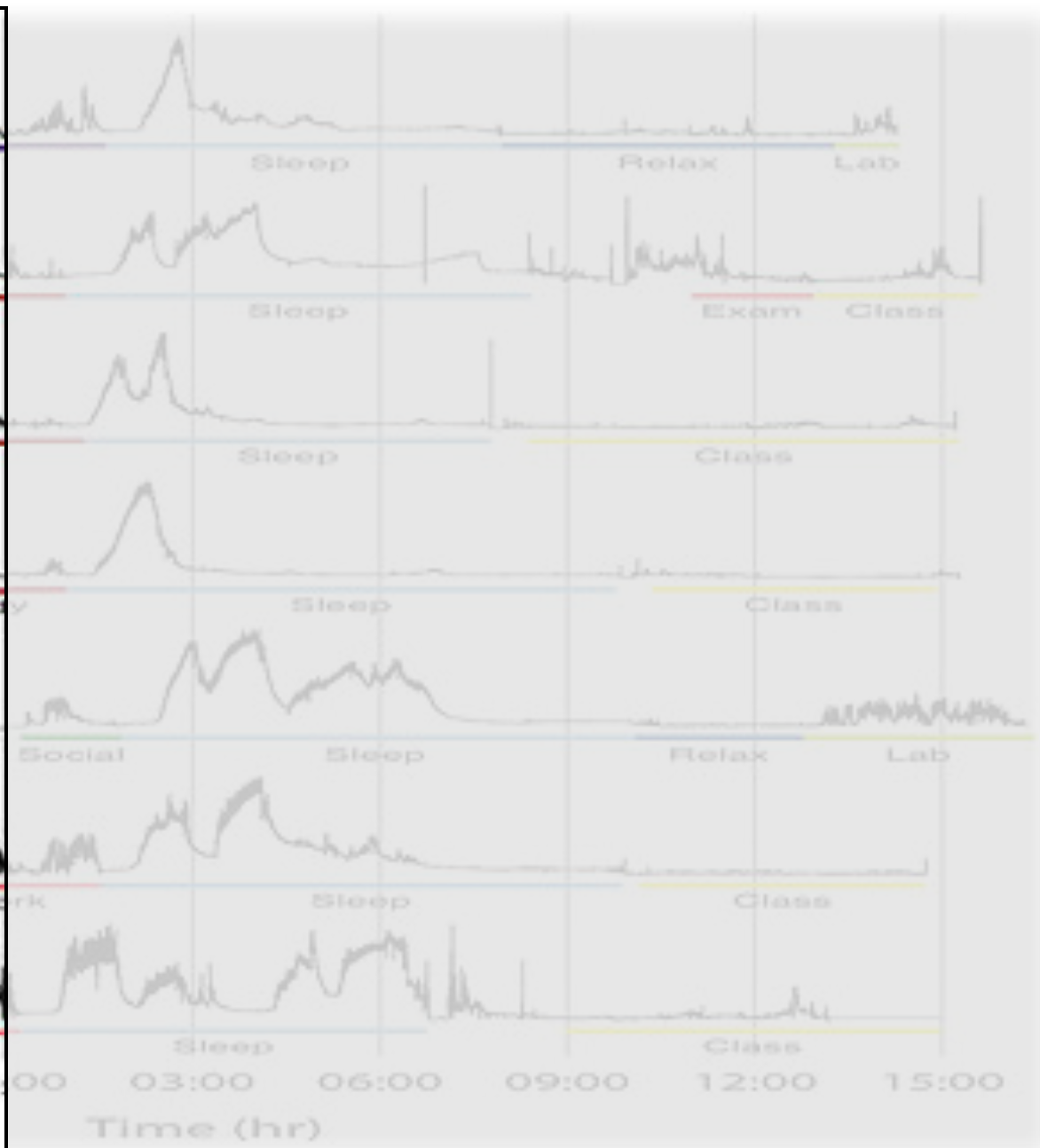
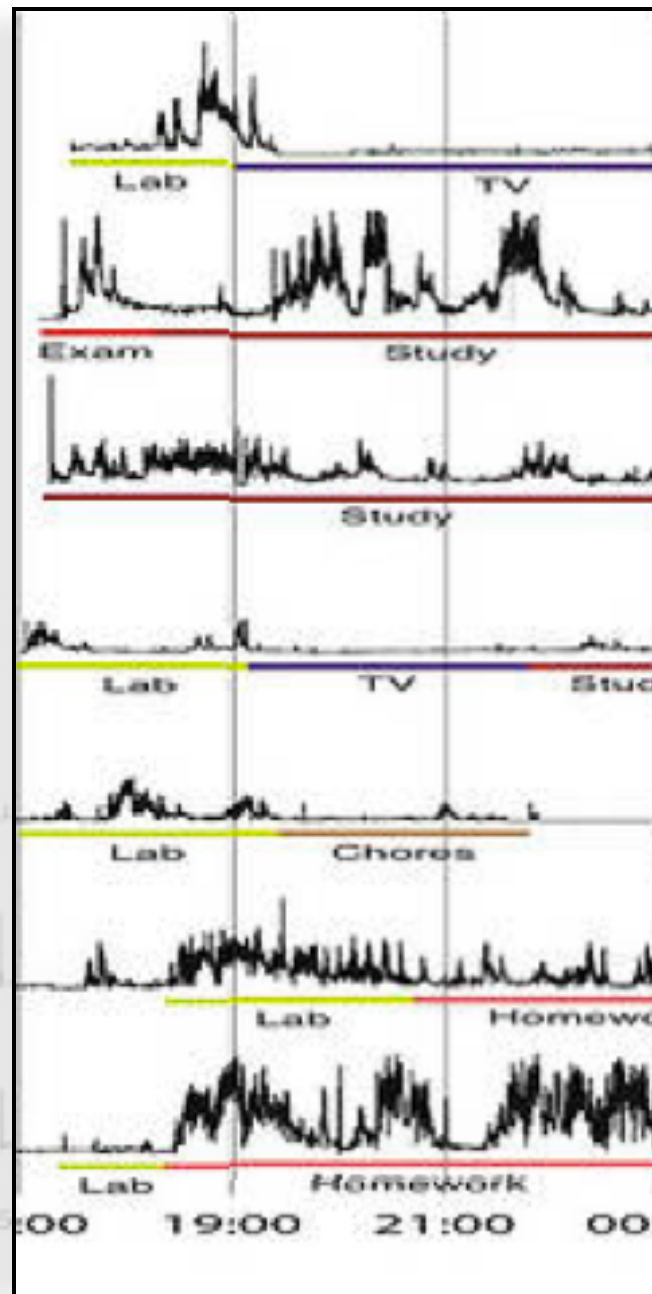
lecture

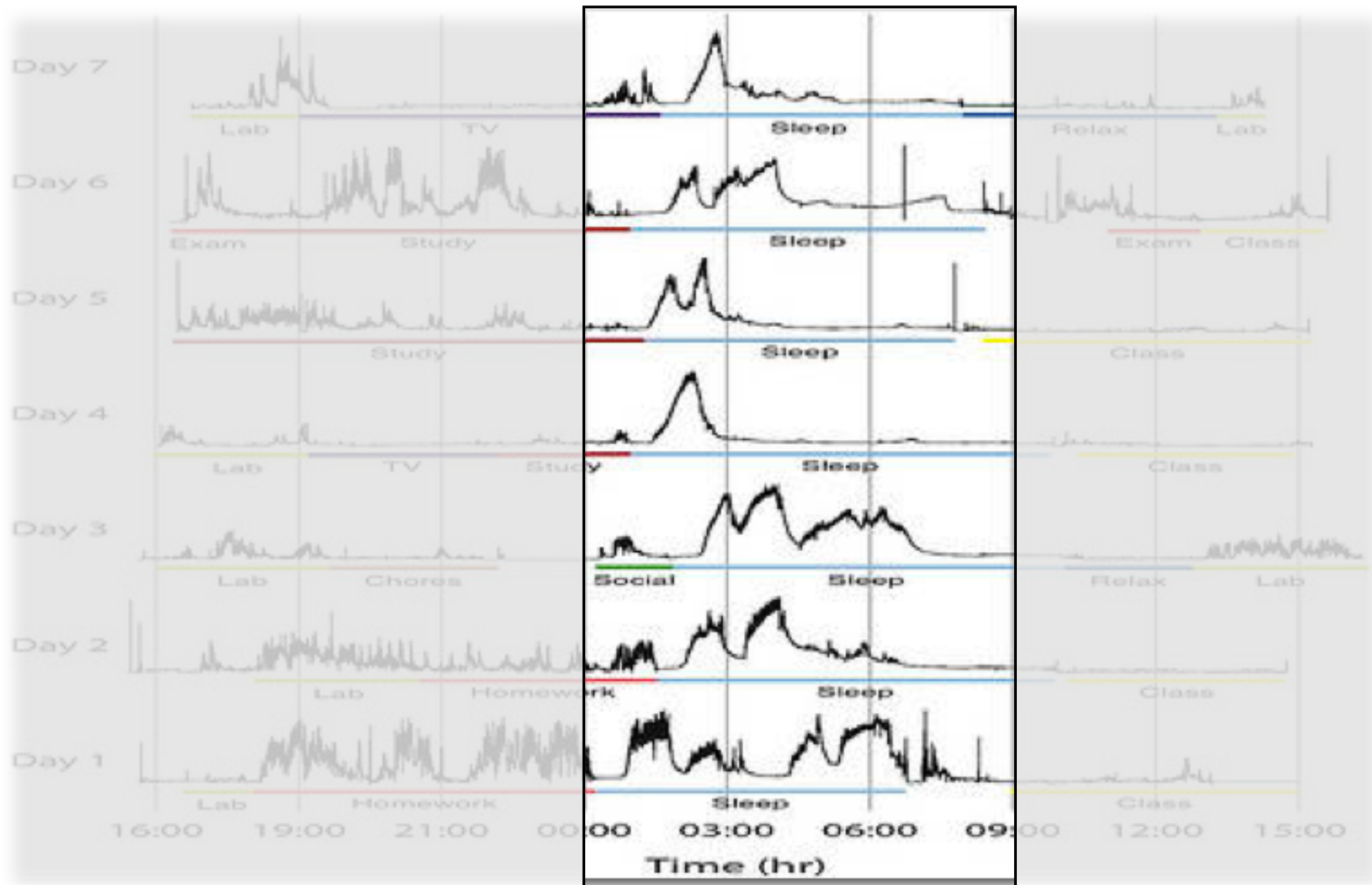


The diagram illustrates a traditional lecture format. It features a single orange rounded rectangle labeled 'lecture' that spans the entire duration from 0 minutes to 20 minutes. A horizontal timeline at the bottom is marked with '0 min' at the start and '20 mins' at the end, with vertical lines connecting the timeline to the start and end of the lecture block.

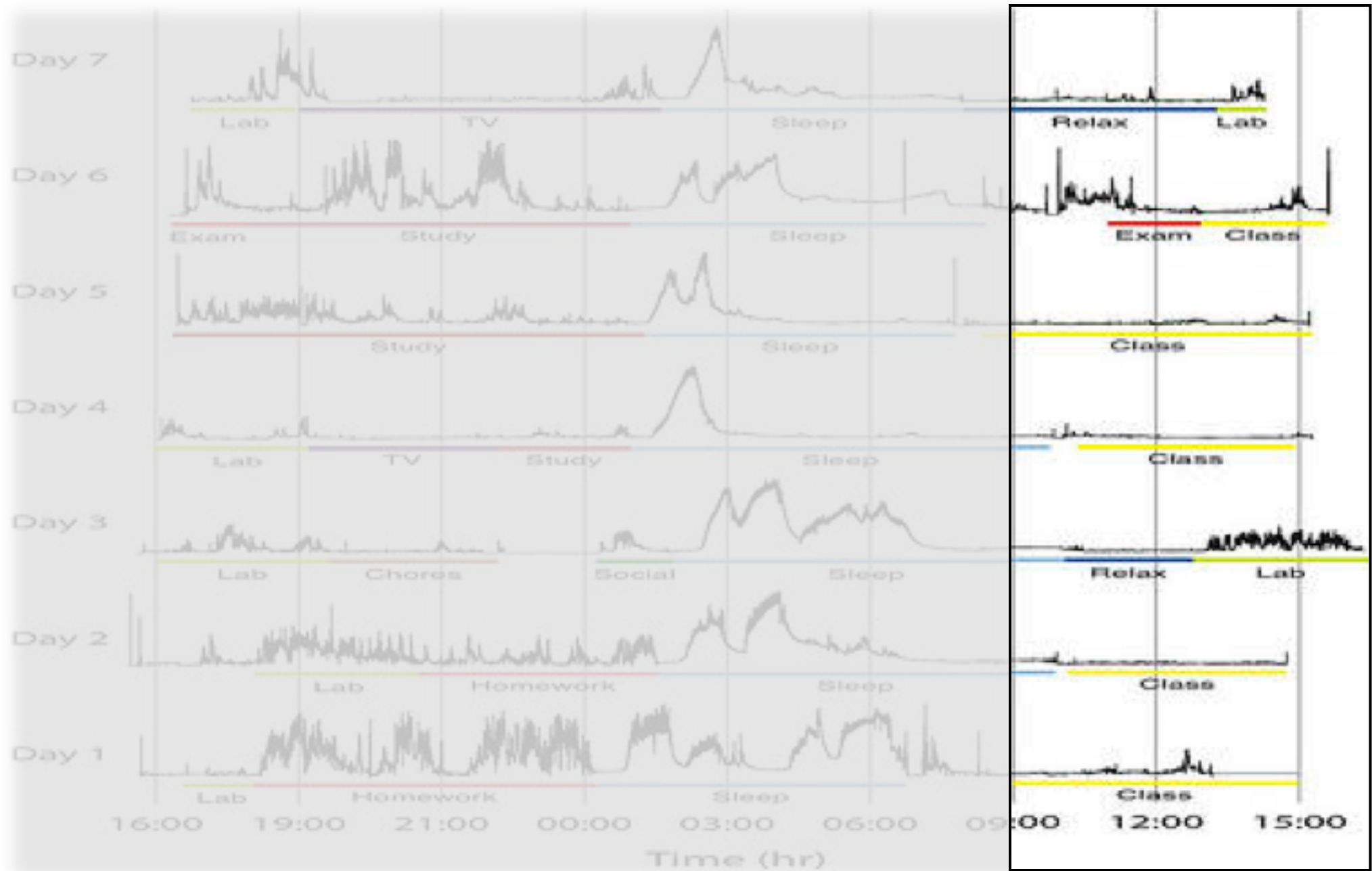
0 min

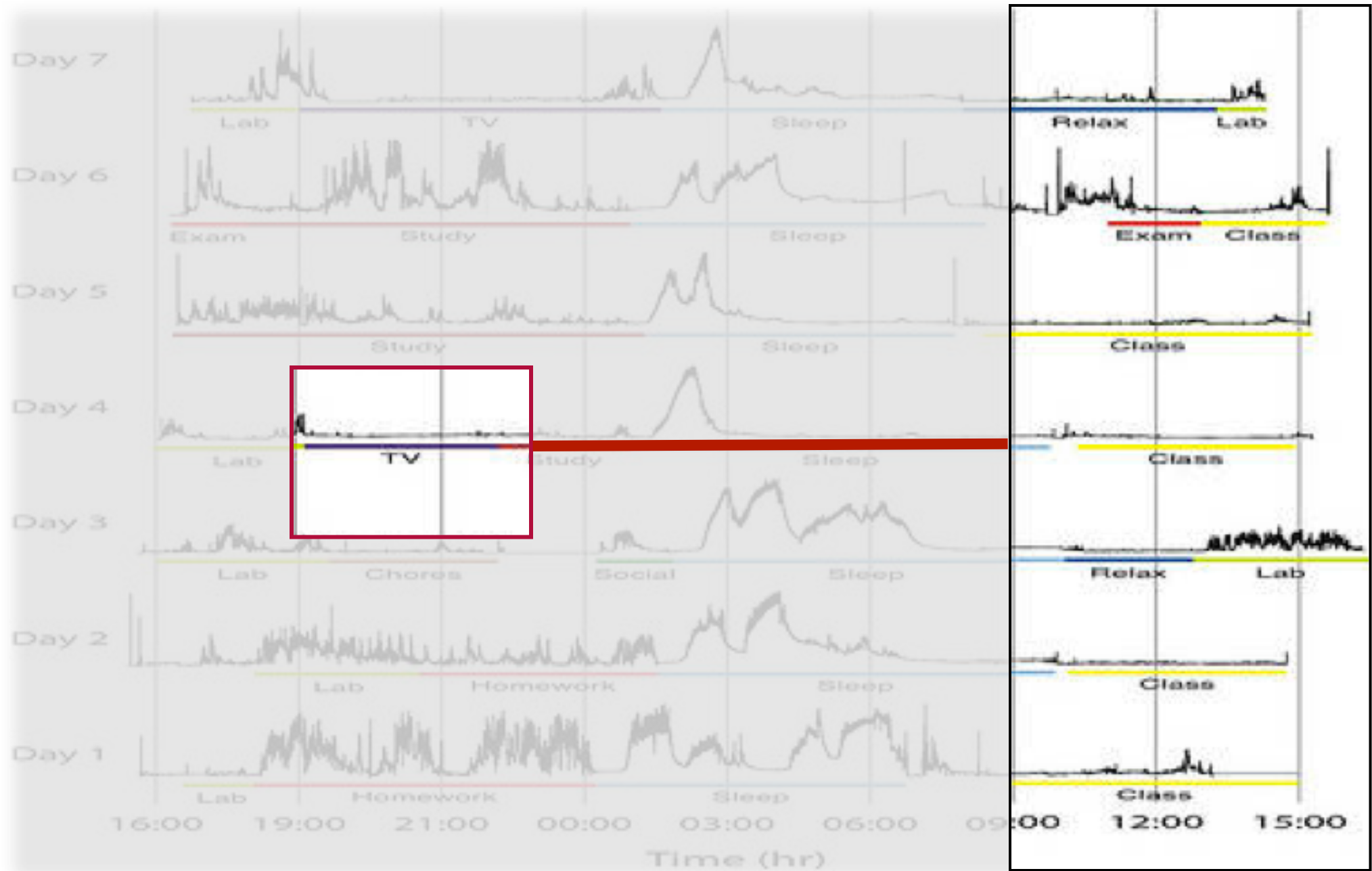
20 mins



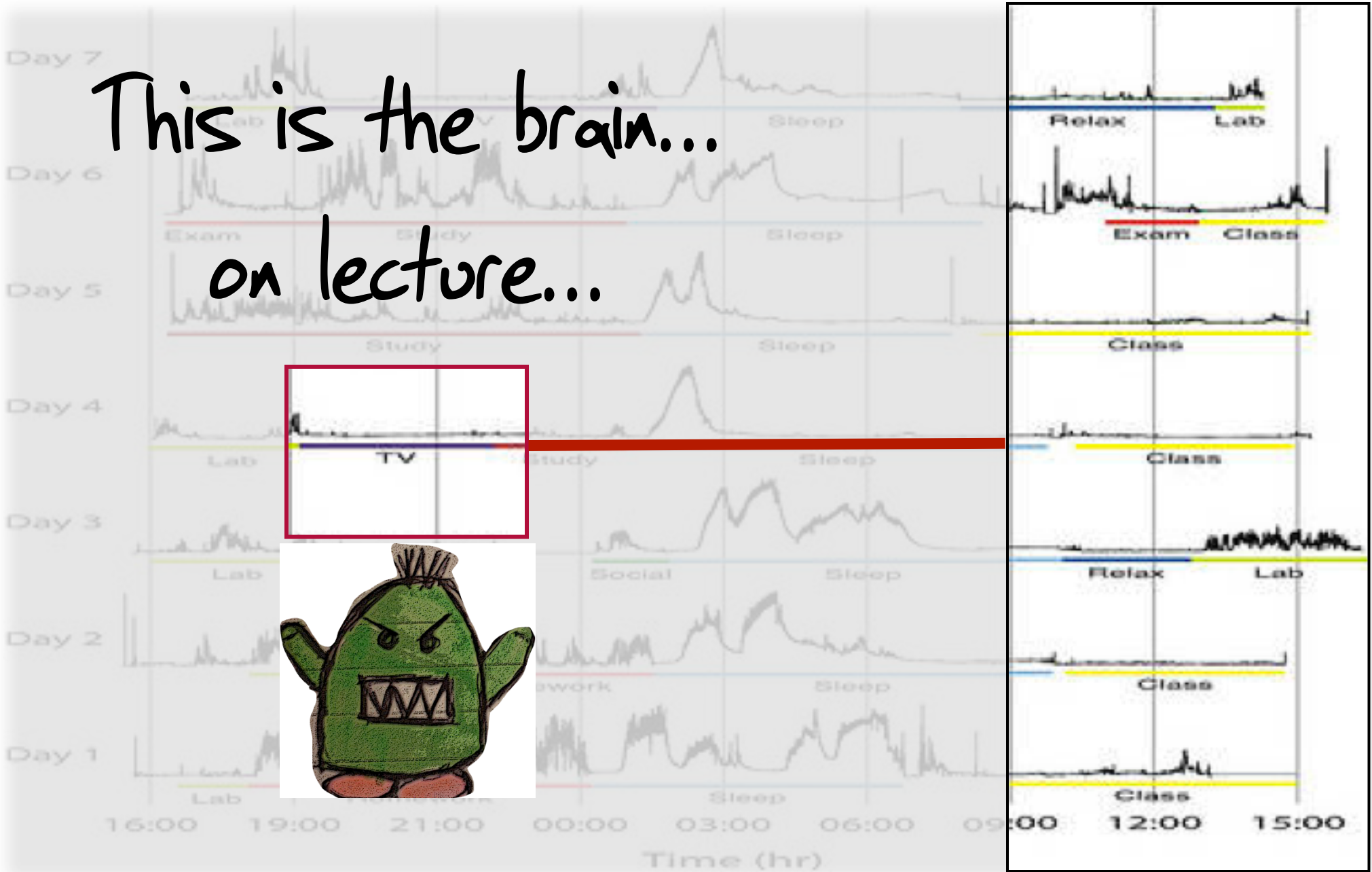






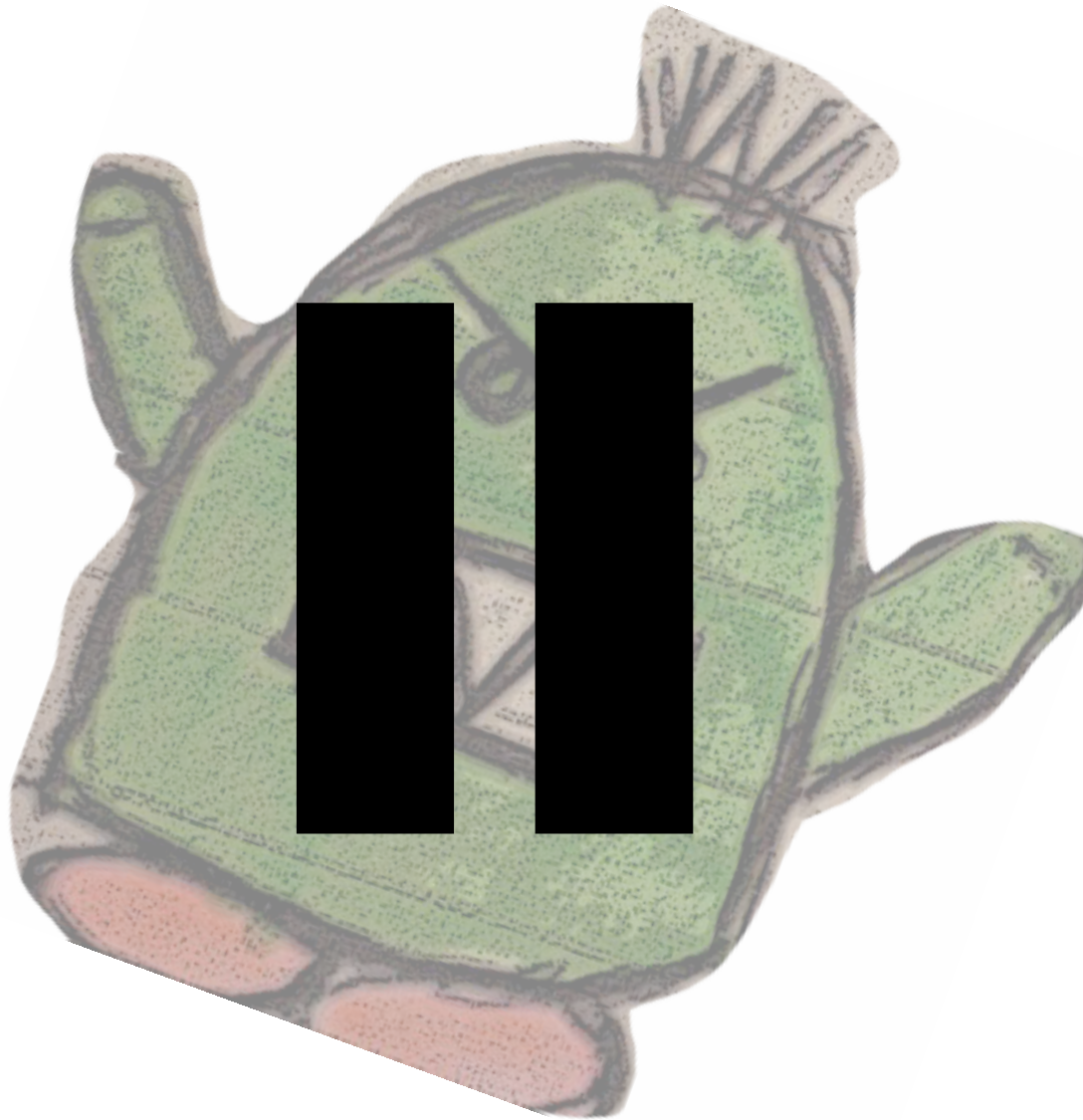


This is the brain...  
on lecture...



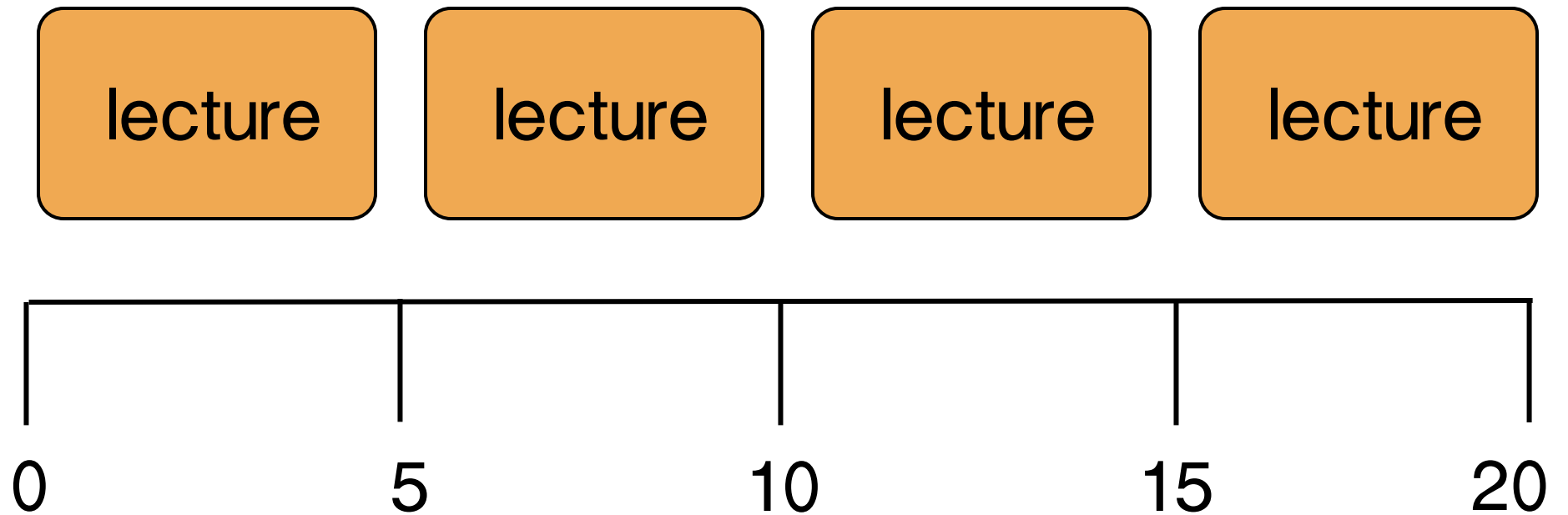


# Chunking



## Pause Method Is Your Friend

# Chunking









If you assess it...  
they will come

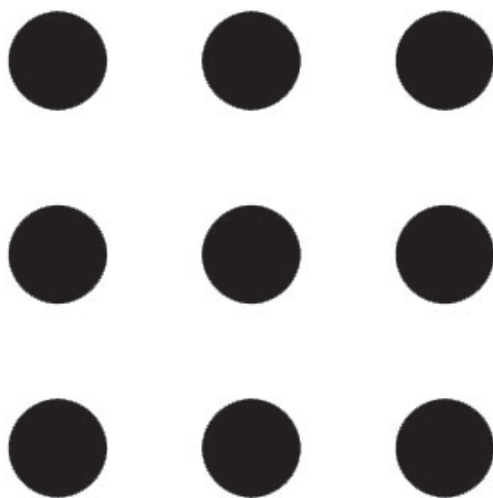


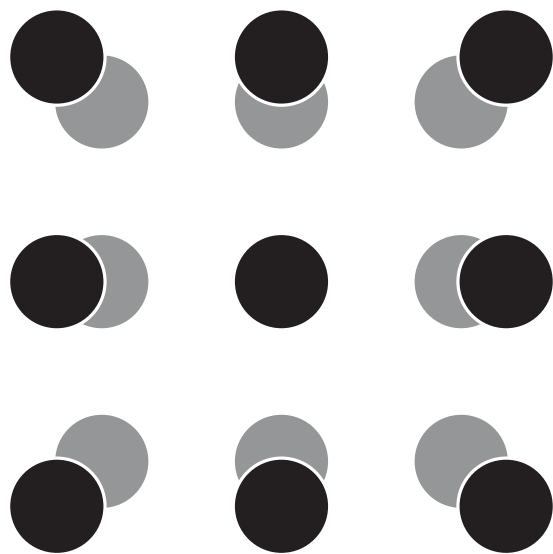


# Thermal Expansion



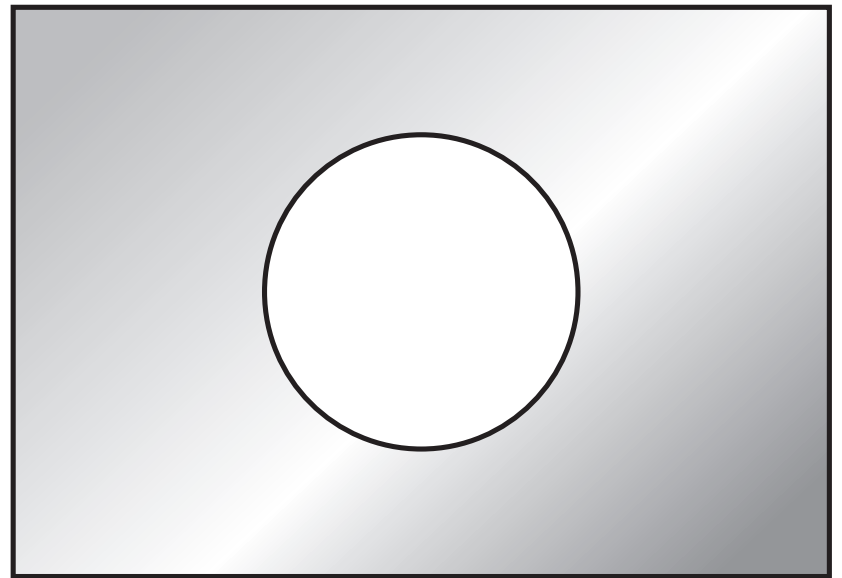
When metals heat up, they  
expand.





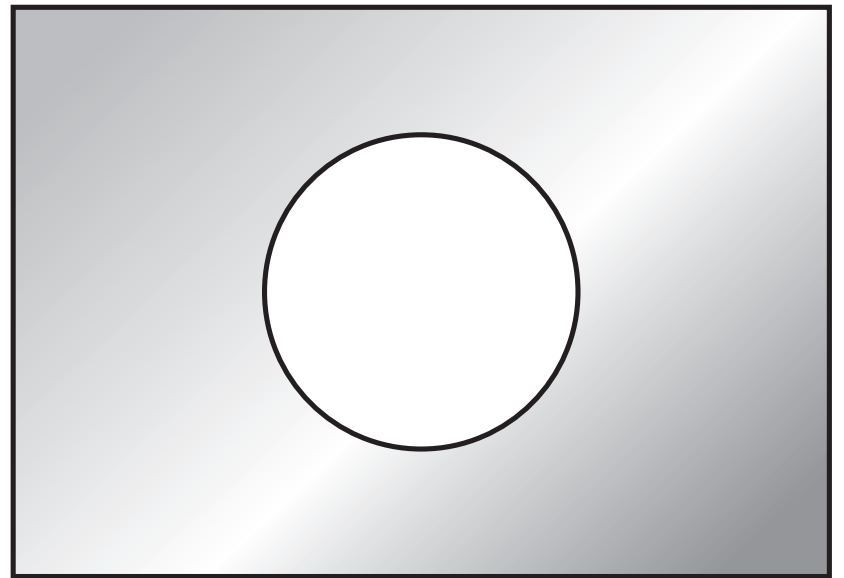
Consider an aluminum plate with a hole in it.

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



Consider an aluminum plate with a hole in it.  
If you heat it uniformly what happens to  
diameter of hole?

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





What happens when you heat metals up?

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

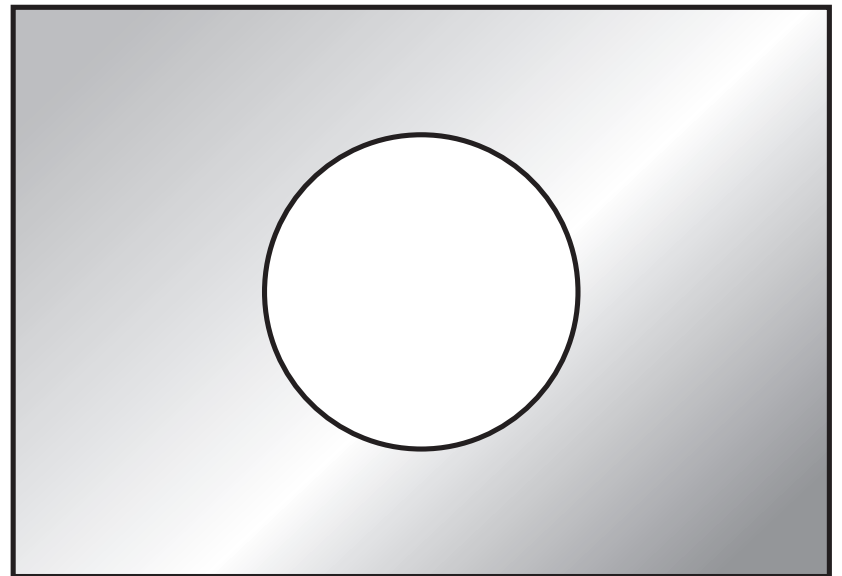


If you heat it uniformly what happens to diameter of hole?

**A. increases**

**B. stays the same**

**C. decreases**



# **What just happened?**

**1. made a commitment, gained awareness of knowledge state**

**2. externalized your answer**

**3. moved from the answer to reasoning**

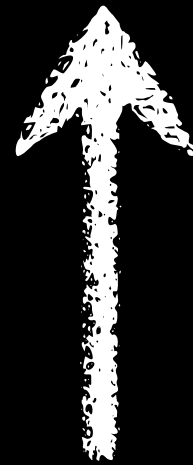
**4. became emotionally invested in the learning process**

# What's the pause method?

- A. An assessment tool
- B. A way to chunk direct instruction
- C. Not sure

1

# CHUNK IT WITH TESTS



note taking  
retention  
performance

2

PLAY WITH VELCRO

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

Study these letters, don't write them down.

J FKFB INAT OUP SNA SAI RS



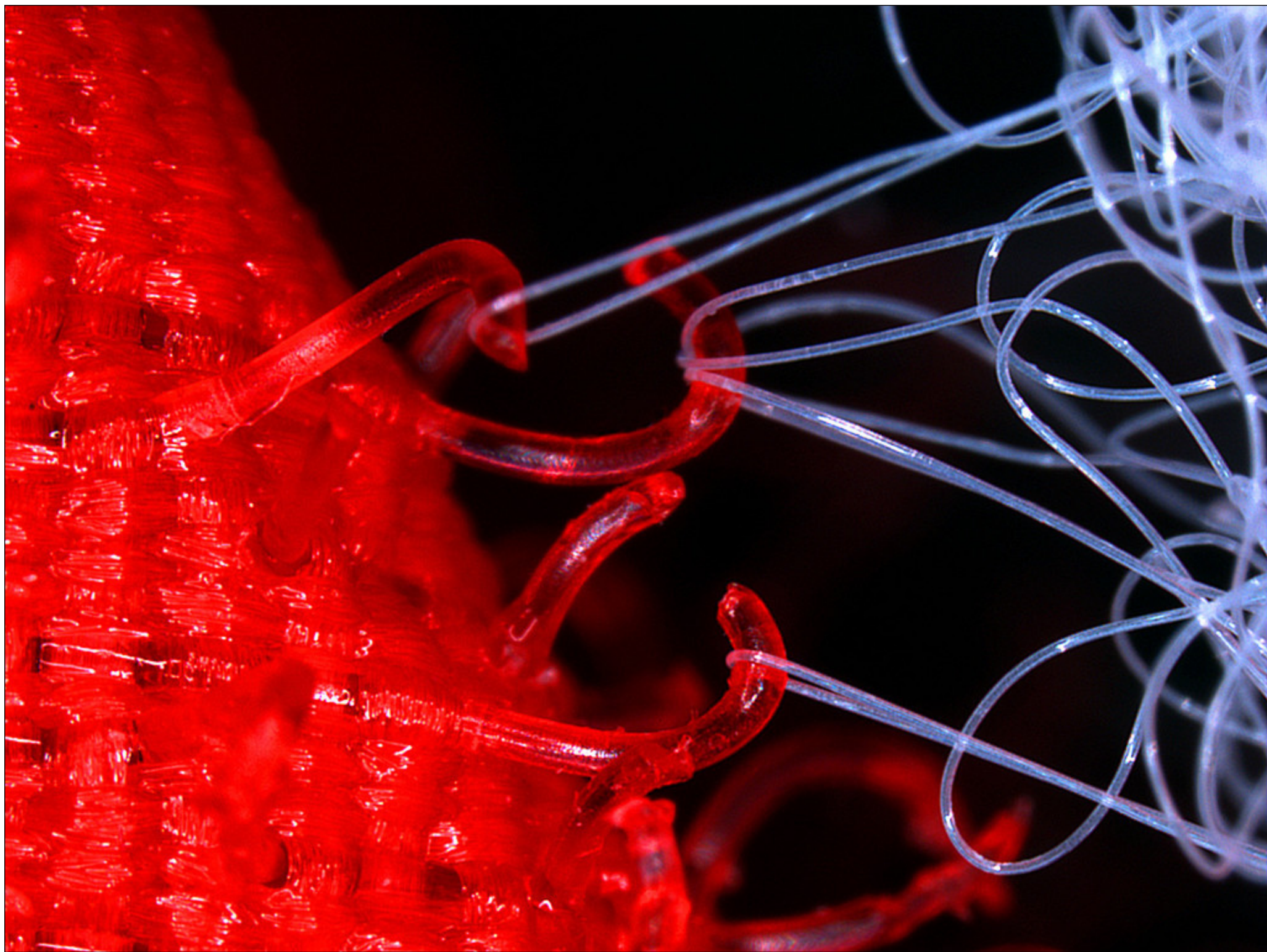
**Study these letters, don't write them  
down.**

Study these letters, don't write them down.

J FKFB INAT OUP SNA SAI RS

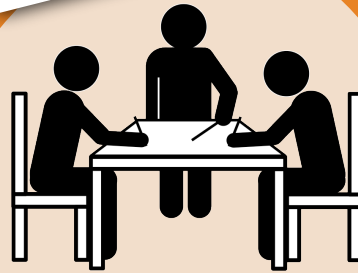
Study these letters, don't write them down.

JFK FBI NATO UPS NASA IRS



# The Flipped Classroom

**DURING**

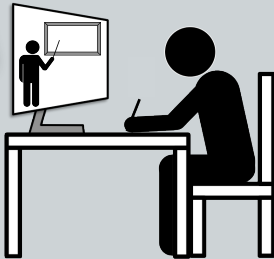


Students practice applying key concepts with feedback

In Class

Students prepare to participate in class activities

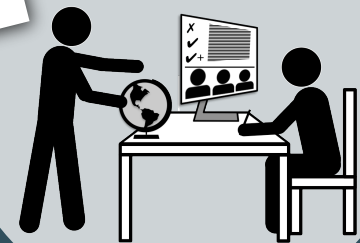
**BEFORE**



Out of Class

**AFTER**

Students check their understanding and extend their learning





67

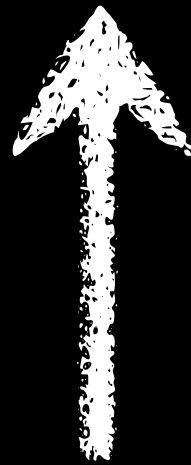
69

78

81

2

PLAY WITH VELCRO



retention  
engagement  
transfer of learning



3

REMEMBER THE LITTLE ENGINE  
THAT COULD



You can learn new things, but you can't really change your basic intelligence.

A. Strongly Agree

B. Agree

C. Mostly Agree

D. Mostly Disagree

(display blank flashcard) E. Disagree

(display all four letters) F. Strongly Disagree

No matter how much intelligence you have,  
you can always change it quite a bit.

A. Strongly Agree

B. Agree

C. Mostly Agree

D. Mostly Disagree

(display blank flashcard) E. Disagree

(display all four letters) F. Strongly Disagree

You can learn new things, but you can't really change your basic intelligence.



- A. Strongly Agree
- B. Agree
- C. Mostly Agree
- D. Mostly Disagree
- (display blank flashcard) E. Disagree
- (display all four letters) F. Strongly Disagree

No matter how much intelligence you have,  
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A. Strongly Agree

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C. Mostly Agree

D. Mostly Disagree

(display blank flashcard) E. Disagree

(display all four letters) F. Strongly Disagree

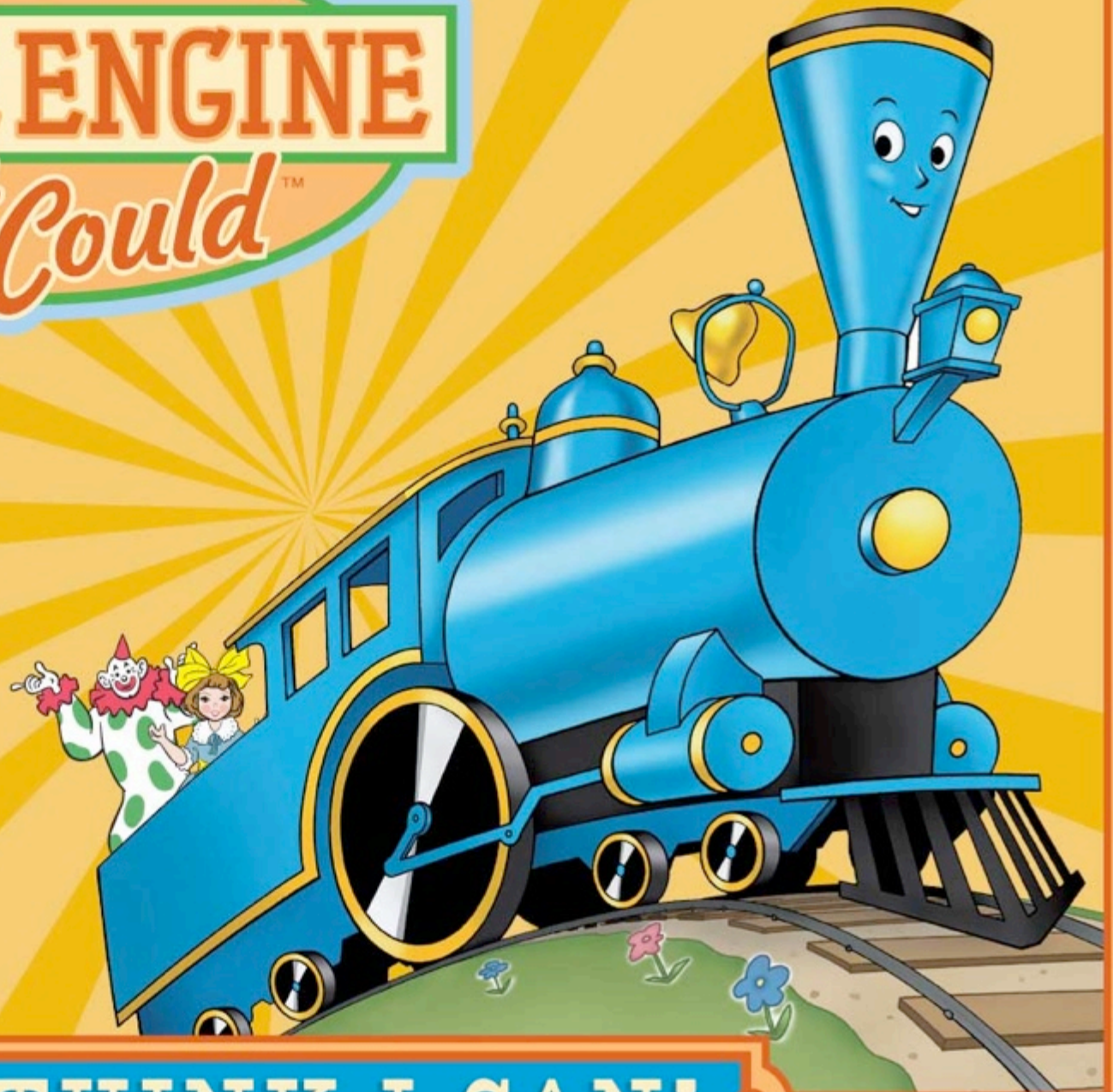
You can change your own mindset.

- A. True
- B. False

**You can change your students' mindsets.**

- A. True
- B. False

The  
**LITTLE ENGINE**  
*That Could*™



I THINK I CAN!

TIP - when giving feedback, use process versus person praise.







## Person Praise vs Process Praise

“You are brilliant”

VS

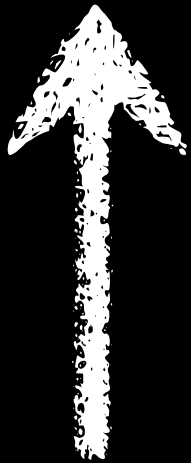
“You worked really hard on this, I’m impressed.”

TIP - teach students about how their brain grows when doing academic work.



3

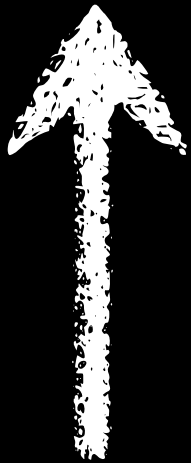
REMEMBER THE LITTLE ENGINE  
THAT COULD



achievement  
engagement  
motivation

3

REMEMBER THE LITTLE ENGINE  
THAT COULD

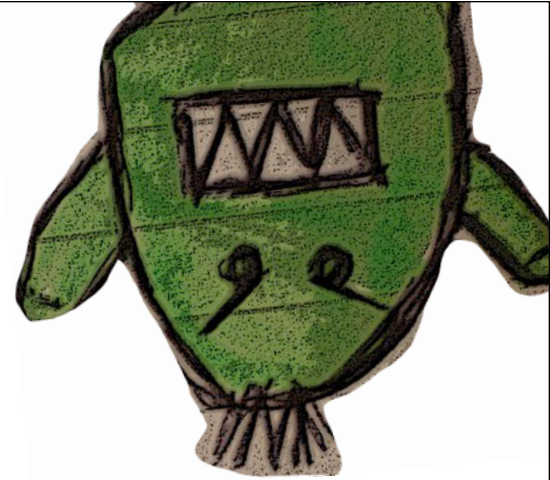


achievement  
engagement  
motivation



racial &  
gender gap  
in math & science

What do you remember most from this session?



How will you use this learning to slay the your boredom monster?



**Tyson\_Awesome** @tegrinse614

6 hrs

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

Expand





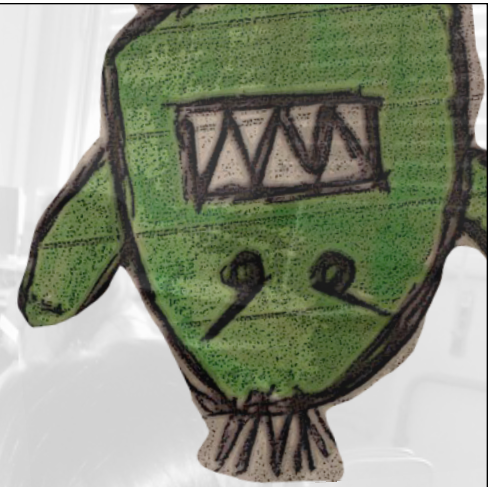
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PEOPLE

Eric Mazur

# Acknowledgements



James Fraser

Ives Araújo

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Jen Ebeler

Carol Dweck

Dan Meyer

Nancy Duarte

Chip and Dan Heath

## BOOKS

Flip Your Classroom

Slide!Dlogy

Made to Stick

Why Students Don't Like School



[www.julieschell.com](http://www.julieschell.com)

@julieschell

