



STUDENT-DRIVEN DATA: PLACING THE FOCUS BACK ON THE STUDENT

NJPSA-FEA FALL CONFERENCE, 2018

BACKGROUND

- **EDUCATIONAL CONSULTANT – UP THE BAR CONSULTING**
 - RANDOLPH, MONTVILLE, NUTLEY, RIDGEWOOD, FREEHOLD, SOUTH HUNTERDON, GARFIELD, BERGENFIELD, UPPER FREEHOLD
 - KEYNOTE SPEAKER – STATE OF NJ/RUTGERS PARENT EXPO
 - JEDDAH PRIVATE SCHOOL IN JEDDAH, SAUDI ARABIA
 - KEYSTONE ACADEMY IN BEIJING, CHINA
 - IRVINGTON PUBLIC SCHOOL DISTRICT, NEW JERSEY
 - PASSAIC PUBLIC SCHOOL DISTRICT, NEW JERSEY
- **ADJUNCT PROFESSOR**
 - THE COLLEGE OF NEW JERSEY, CENTER FOR GLOBAL EDUCATION
GRADUATE COURSES TAUGHT IN THAILAND, TAIWAN, VIETNAM, AND SPAIN
- **ADMINISTRATOR**
 - PRINCIPAL OF MARIE V. DUFFY ELEMENTARY SCHOOL IN WHARTON, NJ
 - VICE PRINCIPAL OF COLUMBIA MIDDLE SCHOOL IN BERKELEY HEIGHTS, NJ
 - DIRECTOR OF MARION P. THOMAS CHARTER SCHOOL IN NEWARK, NJ
- **TEACHER**
 - 5TH AND 6TH GRADE TEACHER AT KAOHSIUNG AMERICAN SCHOOL IN TAIWAN
 - 1ST GRADE TEACHER AT COLEGIO MAYA INTERNATIONAL SCHOOL IN GUATEMALA
 - 5TH GRADE BILINGUAL TEACHER IN CAMDEN, NEW JERSEY

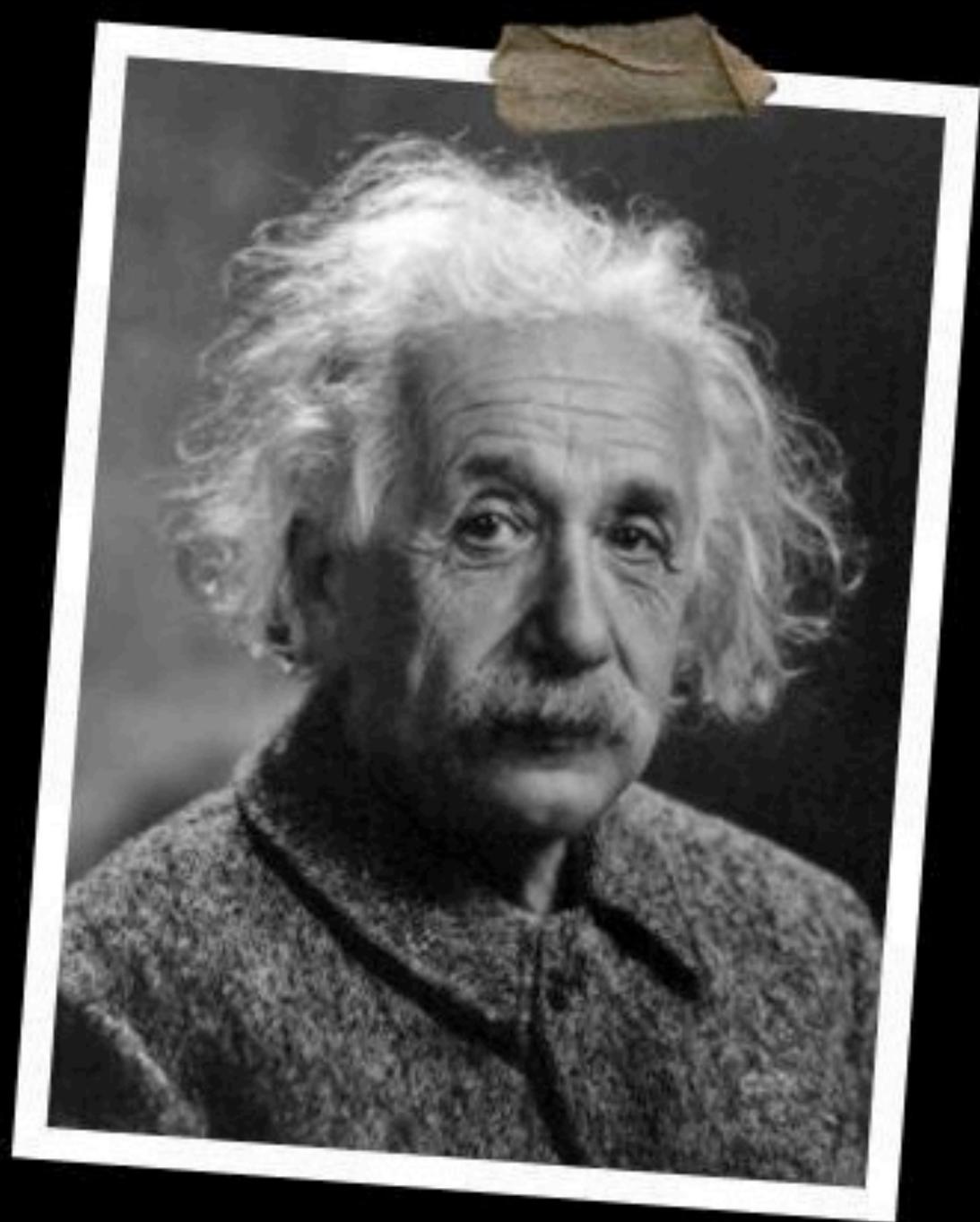


THE CHALLENGE

“WE ARE CURRENTLY PREPARING STUDENTS FOR JOBS THAT HAVEN’T BEEN CREATED WITH TECHNOLOGIES THAT HAVE NOT YET BEEN DEVELOPED IN ORDER TO SOLVE PROBLEMS THAT WE DON’T EVEN KNOW EXIST YET.”



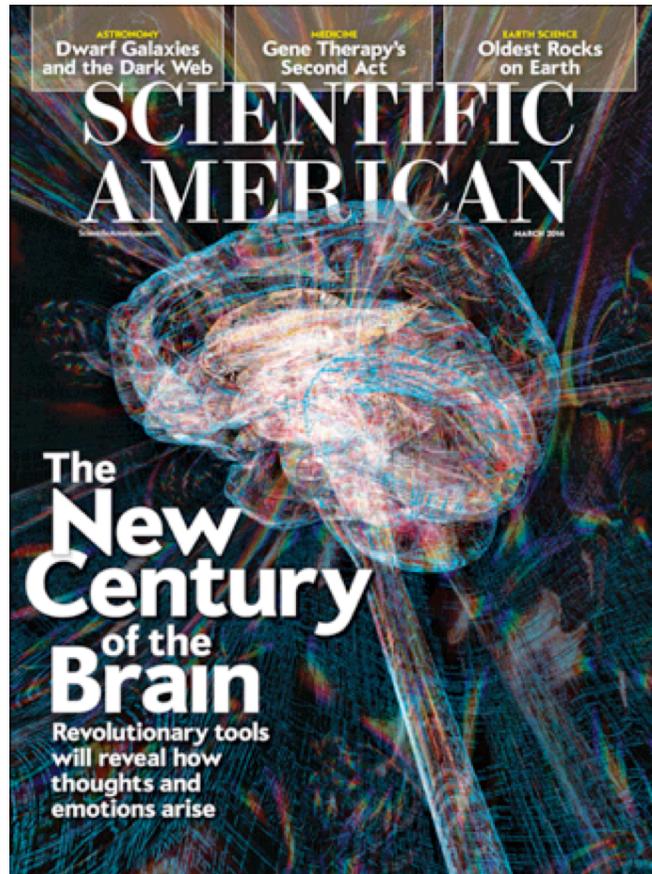
**"Education is not
the learning of
facts, but the
training of the mind
to think."
-Albert Einstein**



NEURO REVOLUTION?

NEURO-LAW

Neuroaesthetics



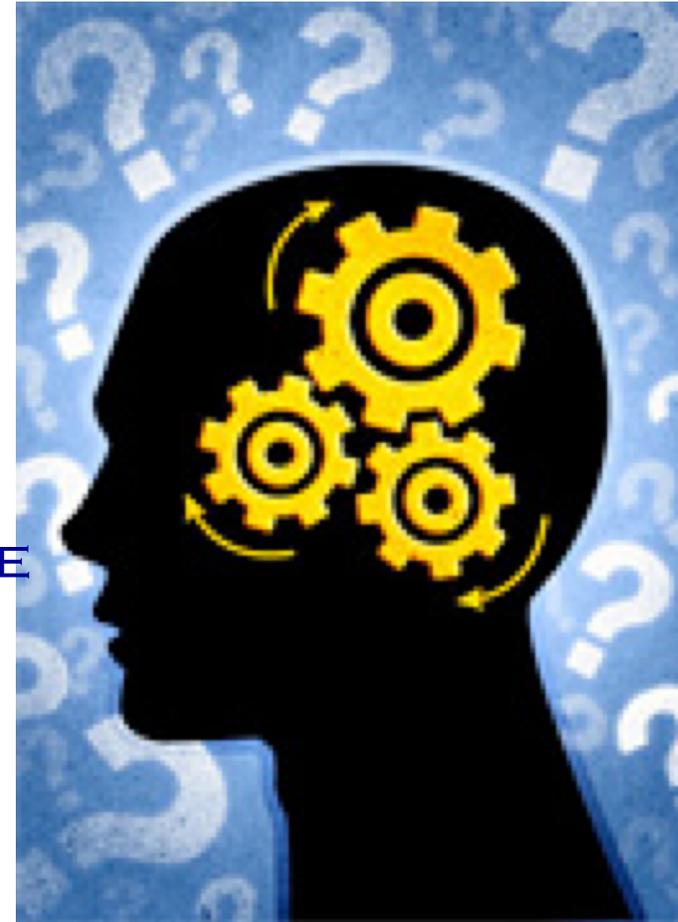
Neuroleadership

NEURO CONSULTING

The brain is the most complex machine on Earth.

TAKE A STEP BACK TO SCIENCE 101

- GEARS ARE FOR TRANSMITTING POWER FROM ONE PART OF A *MACHINE* TO ANOTHER.
- **OIL** LUBRICATES THE GEARS IN ORDER FOR THE *MACHINE* TO RUN SMOOTHLY.





data oil

is the new

we need to find it,
extract it, refine it,
distribute it and
monetize it.

David Buckingham



DATA IS THE NEW OIL,
AND INTELLIGENT
INFORMATION IS THE
NEW CURRENCY

Data- and intelligence-driven enterprises win*

LET THAT SINK IN FOR A MOMENT

Data- and intelligence-driven enterprises win*



THE RIGHT THING TO DO IN THE 21ST CENTURY

1. MAKE DATA PART OF AN ONGOING CYCLE OF INSTRUCTIONAL IMPROVEMENT.
2. **TEACH STUDENTS TO EXAMINE THEIR OWN DATA AND SET LEARNING GOALS.**
3. ESTABLISH A CLEAR VISION FOR SCHOOL-WIDE DATA USE.
4. PROVIDE SUPPORTS THAT FOSTER A DATA-DRIVEN CULTURE WITHIN THE SCHOOL.
5. DEVELOP AND MAINTAIN A DISTRICT-WIDE DATA SYSTEM.

MY GOAL FOR TODAY

TO INCITE EDUCATORS TO STRATEGICALLY
PLACE THE IMMENSE POWER OF DATA INTO
THE HANDS OF OUR
STUDENTS, SO THEY WILL
EMERGE FROM OUR
SCHOOLS AS CONFIDENT,
INTELLIGENT, AND EQUIPPED
THINKERS, READY TO TAKE ON THE WORLD.



READY FOR A LITTLE TEST?

BRAINTEASERS

Each of the 12 items below is a separate puzzle.
How many can you figure out?

1 MY TONGUE st	2 	3 POWAUSTERS	4 
5  TH	6 GRA 12" VE	7 kk cc uu tt ss word word word word	8 22 Arizona
9 NNNNNNN AAAAAAA CCCCCCC	10 \$o all all all all	11 	12 s a n d a n n n a d n a s

1 It's on the tip of my tongue 7 _____

2 _____ 8 _____

3 _____ 9 _____

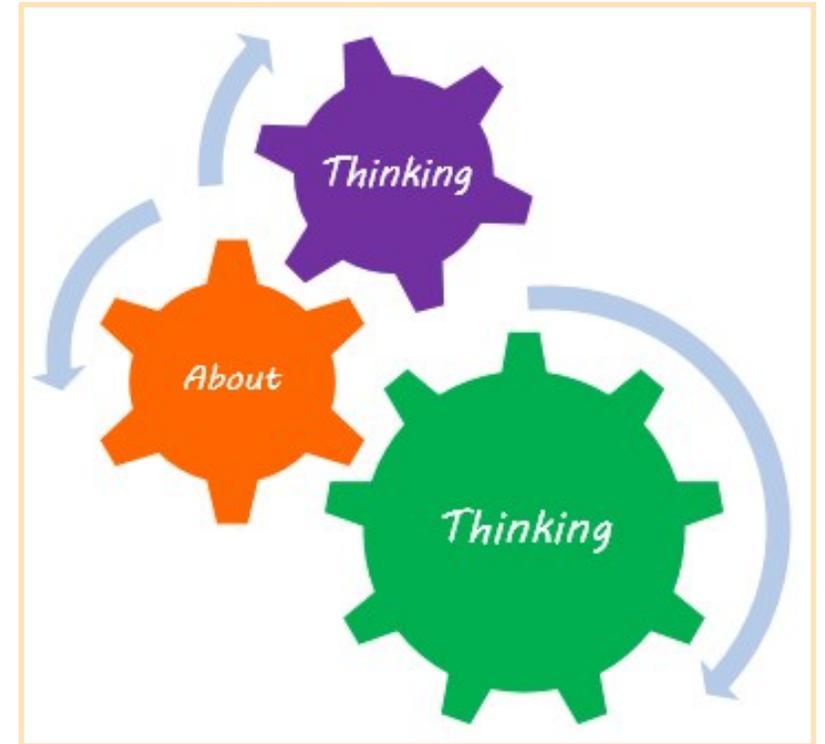
4 _____ 10 _____

5 _____ 11 _____

6 _____ 12 _____



METACOGNITION



MY META MOMENT

1. **HOW DO I THINK I WILL DO? WHY?**
2. HOW DID I DO? WHY?
3. WHAT WILL I DO DIFFERENTLY NEXT TIME TO IMPROVE MY LEARNING?

* THE ROLE OF EXPRESSIVE WRITING IN MATH ANXIETY

* WRITING ABOUT WORRIES EASES ANXIETY AND IMPROVES TEST PERFORMANCE



META MOMENT



Name:
Date:
Circle one: quiz/test/project/other

1. How do I think I will do? Why?

I am a little nervous about this quiz since it's the first quiz with this teacher, so I'm not sure what to expect. The study guide was helpful and made me feel confident. But I waited until the last minute to study, so I'm not sure I know everything. But I think I probably do.

2. How did I do? Why?

It was not as hard as I thought it would be, so I am relieved. I didn't understand the second part, with the essay, but when I reviewed it in class after the quiz with my study buddy, she explained it better so I understand it now. Reviewing the study guide before the quiz really helped, and I had pretty good notes that helped too.

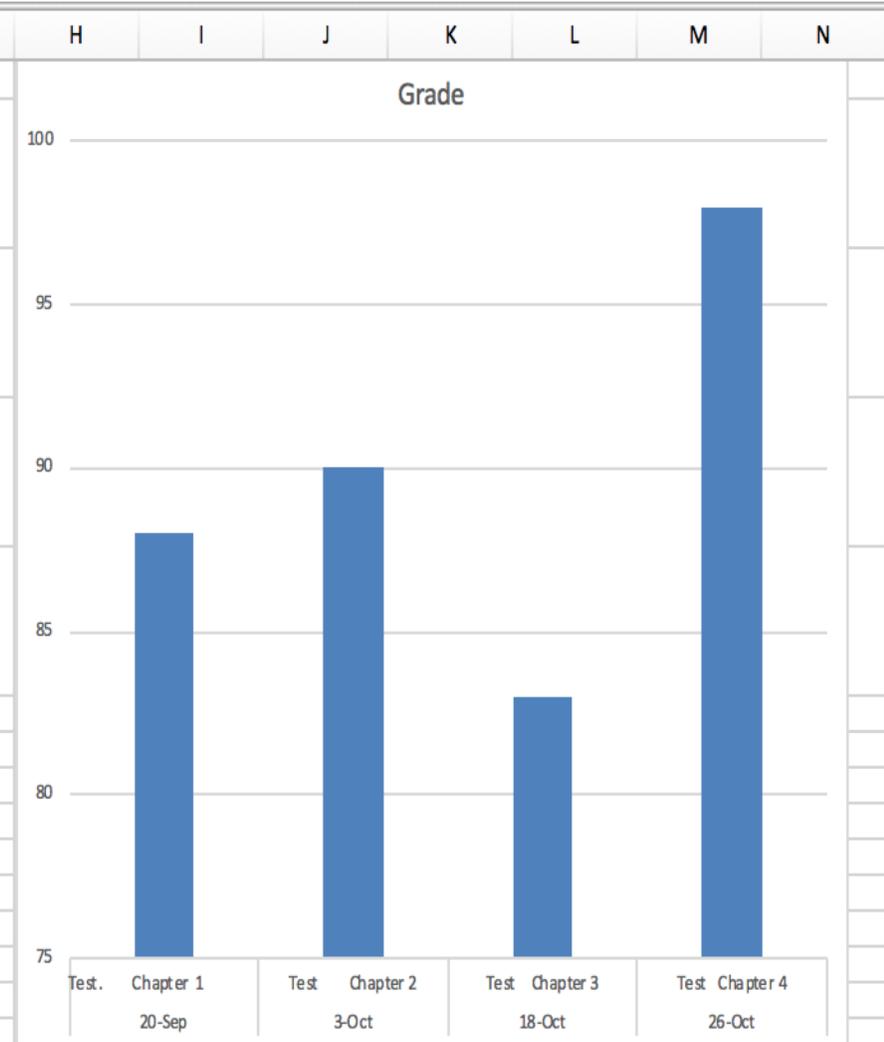
3. What will I do differently next time to improve my learning?

I will definitely try to study a little at a time instead of all the night before. And if I'm not sure about something during class, I will ask the teacher or another student to explain it. Also, my friend did a study group, and they all did pretty well, so I may join their group next time.

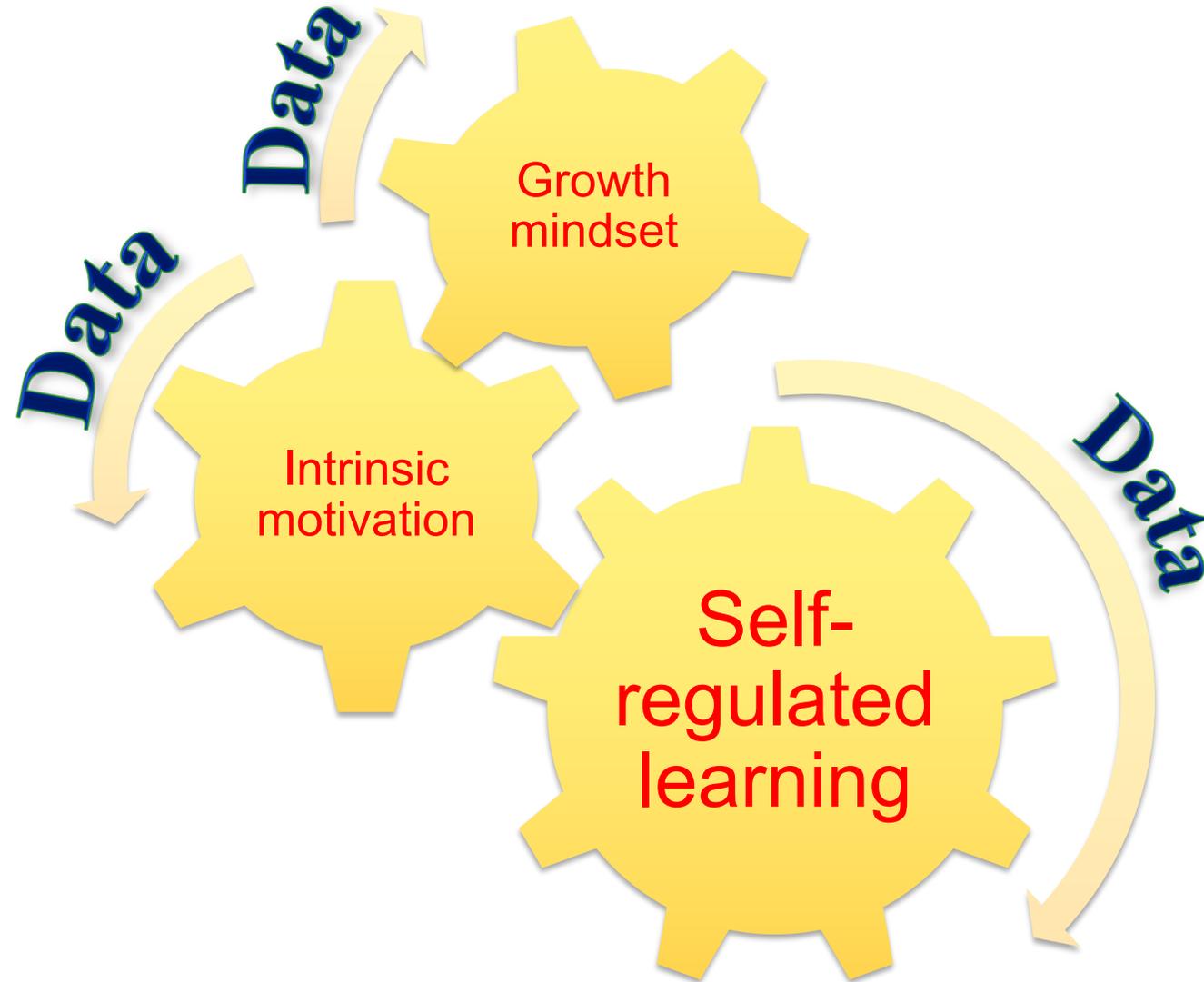
Model student
status

MY META MOMENTS

A	B	C	D	E	F
Date	Topic	Grade	How do I think I will do? Why?	How did I do? Why?	What will I do differently next time?
20-Sep	Test. Chapter 1	88	I think I am going to do well on this test because I studied a little every night.	I didn't do as well as I expected. I think I need to come up with a different strategy for studying.	I will ask my teacher for a different strategy to try.
3-Oct	Test Chapter 2	90	I am trying the Quizlet strategy, so I think I will do better than last time	I am happy with my score. The strategy worked!	I will practice an additional 10 minutes per night, beginning 4 days before the test
18-Oct	Test Chapter 3	83	I didn't study ahead of time, because I didn't have time.	I did better than I expected, considering I didn't really study	I will get back on track for the next test, with the Quizlet and extra study time
26-Oct	Test Chapter 4	98	I did all the right things, studying extra and Quizlet, so I hope it was worth it	Yes! I aced it! That felt so good!	I will definitely keep up how I am studying. It's so worth it!



GEARING UP FOR SUCCESSFUL LEARNING



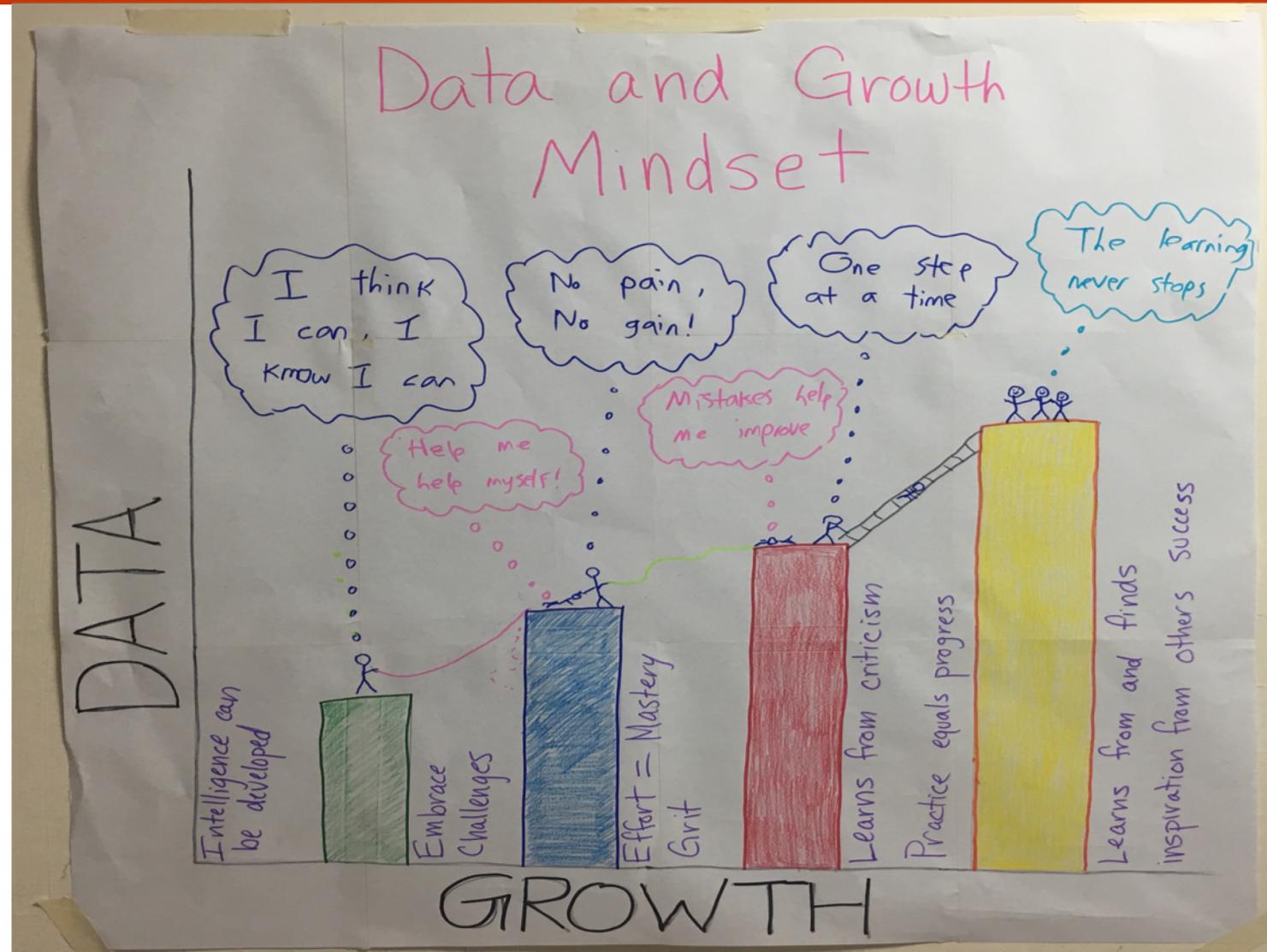
FIXED MINDSET



GROWTH MINDSET



MY META MOMENTS PROMOTE A GROWTH MINDSET



INTRINSIC MOTIVATION

- AUTONOMY – THE DESIRE TO DIRECT OUR OWN LIVES
- MASTERY – THE URGE TO GET BETTER AND BETTER AT SOMETHING THAT MATTERS
- PURPOSE – THE YEARNING TO DO WHAT WE DO IN THE SERVICE OF SOMETHING LARGER THAN OURSELVES



MY META MOMENTS PROMOTE THE SIX CS OF INTRINSIC MOTIVATION

- CHOICE TO SELECT STRATEGIES
- CHALLENGE TO ACHIEVE GOALS
- CONTROL OF GROWTH
- COLLABORATION TO CONSIDER FEEDBACK
- CONSTRUCTED MEANING OF PERSONAL PROGRESS
- CONSEQUENCES SHARED WITH OTHERS



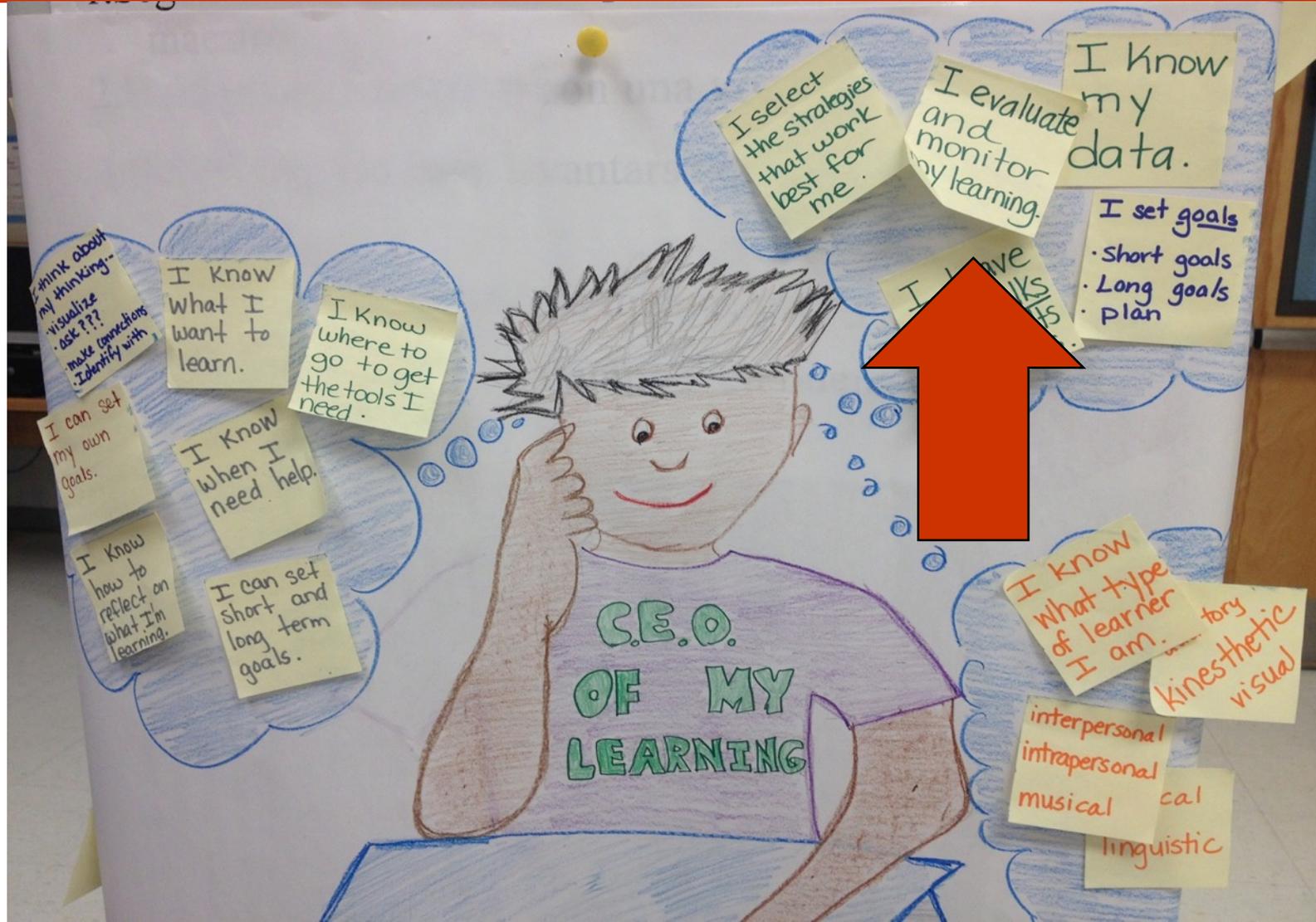
SELF-REGULATED-LEARNING

The ideal: Self-regulated learning (SRL)



(Butler, 1997; Pintrich, 2000; Winne & Hadwin, 1998)

MY META MOMENTS FOSTER SELF-REGULATED LEARNING





ARTWORK: TAMAR COHEN, ANDREW J BUBOLTZ, 2011, SILK SCREEN
ON A PAGE FROM A HIGH SCHOOL YEARBOOK, 8.5" X 12"

ANALYTICS

Data Scientist: The Sexiest Job of the 21st Century

WHAT TO READ NEXT

[Fulfill the Dream of Leading a Nonprofit](#)

[Beware Pundits Bearing National Stereotypes](#)

[Getting It Right the Second Time](#)

OPPORTUNITY KNOCKS!

- STUDENTS USE THEIR ASSESSMENTS AS A SOURCE FOR DATA, ANALYZING STRENGTHS, WEAKNESSES, AND PATTERNS TO IMPROVE THEIR WORK.
- STUDENTS REGULARLY ANALYZE EVIDENCE OF THEIR OWN PROGRESS. THEY TRACK THEIR PROGRESS ON ASSESSMENTS AND ASSIGNMENTS, ANALYZE THEIR ERRORS FOR PATTERNS, AND DESCRIBE WHAT THEY SEE IN THE DATA ABOUT THEIR CURRENT LEVEL OF PERFORMANCE.
- STUDENTS USE DATA TO SET GOALS AND REFLECT ON THEIR PROGRESS OVER TIME AND INCORPORATE DATA ANALYSIS INTO STUDENT-LED CONFERENCES.

CHARACTERISTICS OF A DATA WHISPERER

Data scientists aren't born—they're made. IT pros from all backgrounds are working to gain the types of skills companies need as the demand for data scientists outpaces the supply of qualified candidates. These are some common personality traits and skills of a data scientist.



Personality traits:

Intellectual curiosity combined with skepticism and good intuition. A tireless problem-solver driven to find a needle in a haystack. Creativity to guide further investigation with the goal of uncovering new information.



Interpersonal skills:

A storyteller who knows how to present data insights to drive business value and who can communicate with people at all levels of an organization.



Business skills:

Data scientists need knowledge far beyond data analysis and statistics. They need the business savvy to discover patterns that can be used to identify risks and opportunities and the leadership skills to influence business leaders to make data-driven decisions.



Education:

Bachelor's degree in statistics, data science, computer science or mathematics.



Specialized skills:

Data mining, machine learning and distributed computing. Ability to integrate structured and unstructured data. Experience with statistical research techniques, including modeling, data mining, clustering and segmentation.



Tools of the trade:

Familiarity with Hadoop, Pig, Hive, Spark and MapReduce. Comfortable with SQL, Python, Perl or other scripting languages, as well as statistical computing languages such as R.



Keeping Track of My Learning

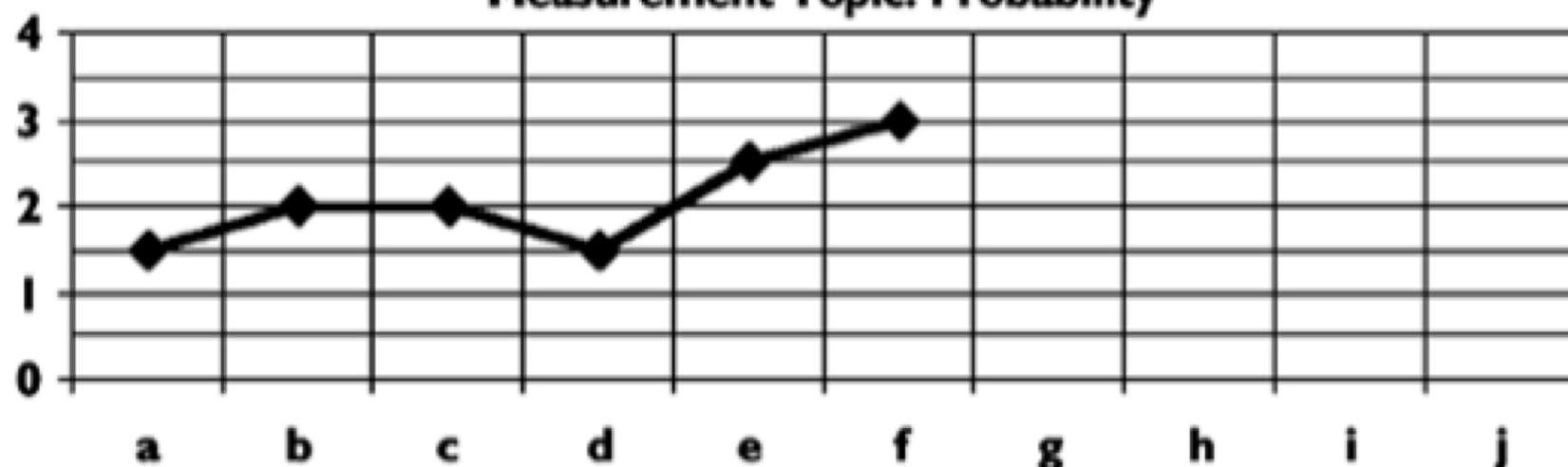
Name: I. H.

Learning Goal: Probability

My score at the beginning: 1.5 My goal is to beat 3 by Nov. 30

Specific things I am going to do to improve: Work 15 min. three times a week

Measurement Topic: Probability



a. Oct. 5

b. Oct. 12

c. Oct. 20

d. Oct. 30

e. Nov. 12

f. Nov. 26

g. _____

h. _____

i. _____

j. _____

Dear Second Grade Parents,

This data binder will be used throughout second grade. The binder will be coming home with your child the first day of each week. The binder will contain data that has been collected from your child throughout the grading period. All of the papers in the binder must remain in the binder until your child's teacher removes them and sends them home to you. The second grade teachers would like you to look through the binder with your child the night it comes home and discuss the papers and data. The binders will need to be returned to school the next day. You will need to sign the paper located in the front of the binder saying that you looked at the binder and the data inside it. We are also asking that you write a small comment to your child about the data you observed.

The purpose of these binders is to show you, your child, and the teacher the academic growth of the student.

If you have any questions about the binder or its contents, please feel free to contact your child's teacher and she would be glad to answer your questions.



Thank you for your support!

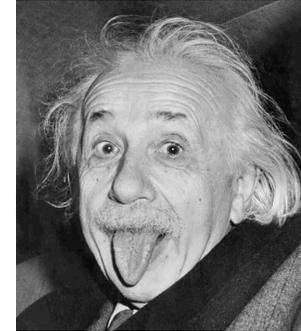
The Second Grade Teachers

Goal Orientation

Name: _____

Period: _____

		Grade Earned
Quarter 1	20%	
Quarter 2	20%	
Midterm	10%	
SEMESTER GRADE		
credit earned = semester grade x 0.5 =		
Grade I want to earn		
What I need to do to earn that grade		
$(\text{Grade I want} - \text{credit earned})/0.5$		

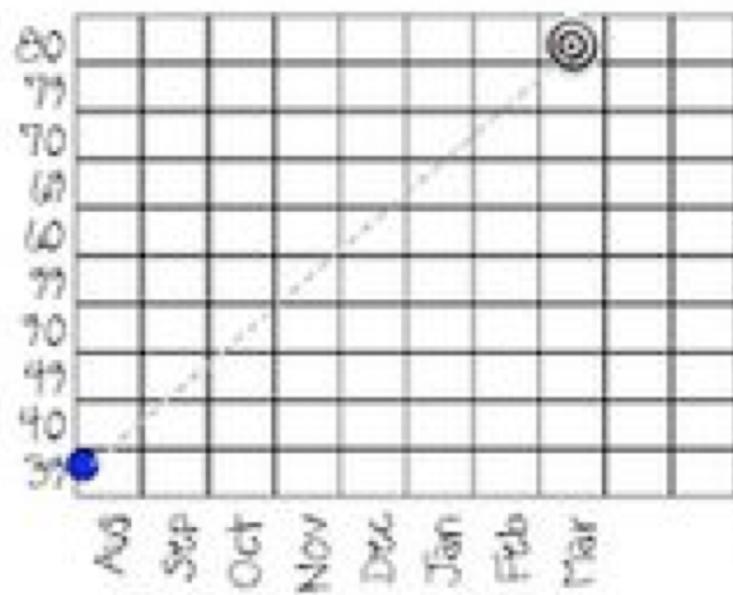


"It is not that I'm so smart.
But I stay with the questions much longer."
Albert Einstein

	Frequently (100% of the time)	Sometimes (70% of the time)	Occasionally (50% of the time)	Never
How often do I ask for help in class?				
How often do I review my notes at night?				
How often do I complete my homework?				
How often do I get help understanding something before a quiz or exam?				
How often do I come to correct quizzes or exams?				
What are the habits and strategies I will implement to meet my goals?				

My IEP Goal

By March, I will read 80 words per minute.



SAMPLE TEMPLATES FOR SELF-REFLECTION AND GOAL-SETTING*

Problem	Learning Target	Right?	Wrong?	Simple Mistake?	More Study?
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

My Strengths:

My Highest Priority for Studying:

What I Need to Review:

Goal	Steps	Evidence
What do I need to improve?	How do I plan to do this?	What evidence will show I've achieved my goal?

Time Frame: Begin _____ End _____

Date _____ **Signed** _____

PARTING THOUGHT

IF YOUR ACTIONS
INSPIRE OTHERS
TO DREAM MORE,
LEARN MORE, DO MORE
& BECOME MORE,
YOU ARE A LEADER

- JOHN QUINCY ADAMS -