

## Is there one right answer to the previous question?

- Business and industry make decisions in the “grey” area frequently. What skills are we developing based on the previous exercise?

Group/Team Work

Critical Thinking

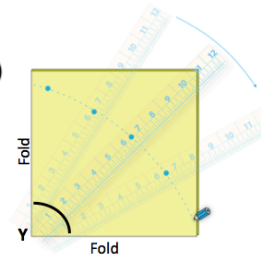
Interpreting Data

Effective Communication

# Providing Context Is Critical - This is Natural In a CTE Classroom

## Let's make a circle skirt

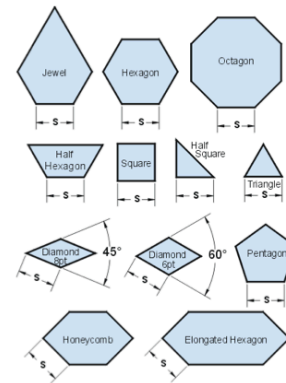
1. Fold your fabric in half, then in half again making sure one edge has all folds...no raw edges.
2. Measure the waist of the doll sitting in front of you(=x)
3. To find the diameter of the waist:  $x/2\pi$   
Divide this number by  $2\pi(3.14) = x/6.28 = y$
4. Measure y from the corner and mark accordingly.
5. Measure 6" from this mark and draw the length of the skirt
6. Cut out the waist measurement, then the length measurement
7. If you would like to sew your skirt, cut a slit/or the whole side edge and sew up the side.
8. Place Velcro on the top edge of the skirt.



# Another Example

## Geometry in quilting

- [http://mercury.educ.kent.edu/database/eureka/documents/LessonPlan\\_QuiltingGeometry.pdf](http://mercury.educ.kent.edu/database/eureka/documents/LessonPlan_QuiltingGeometry.pdf)
- This website discusses specific mathematics in quilt patterns. Would be great to work in conjunction in SLC's or geometry and History teachers
- Underground Railroad quilt patterns



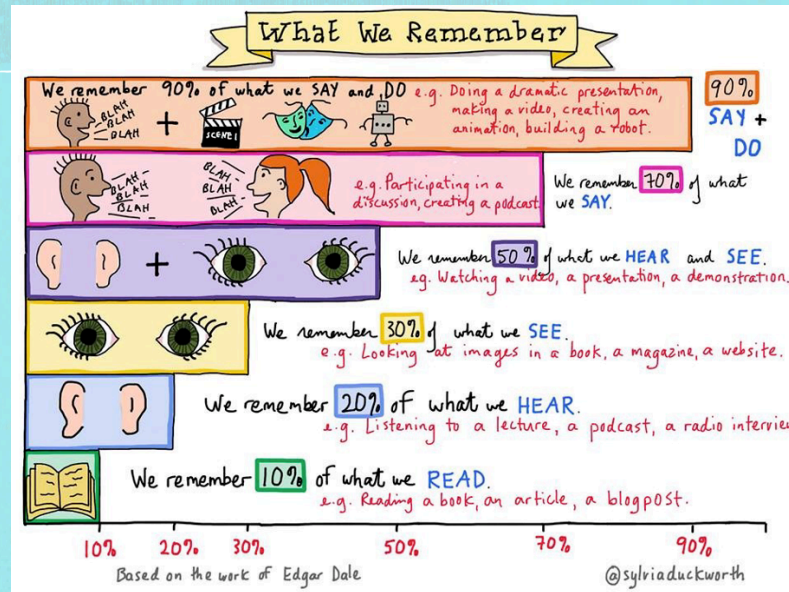


- \* A Great Resource - The Brain Rules by John Medina
- \* Rule #1 - Exercise - Exercise boosts brain power     MOVE
- \* Rule #2 - Survival - The human brain evolved, too     DIFFERENTIATE
- \* Rule #3 - Wiring - Every brain is wired differently
- \* Rule #4 - Attention - We don't pay attention to boring things.     BE ENTHUSIASTIC
- \* Rule #5 - Short-Term Memory - Repeat to remember.
- \* Rule #6 - Remember to Repeat     REVISIT AND REINFORCE



- \* Rule #7 - Sleep - Sleep well, think well.
- \* Rule #8 - Stress - Stressed brains don't learn the same way.
- \* Rule #9 - Sensory Integration - Stimulate more of the senses.  
CTE HAS THE NATURAL ADVANTAGE
- \* Rule #10 - Vision - Vision trumps all other senses.  
SEEING IS BELIEVING (AND REMEMBERING)
- \* Rule #11 - Gender - Male and female brains are different.  
(surprise)
- \* Rule #12 - Exploration - We are powerful and natural explorers.  
WE CRAVE AUTHENTIC PROBLEMS AND PROJECTS WITH OPEN ENDED ANSWERS!

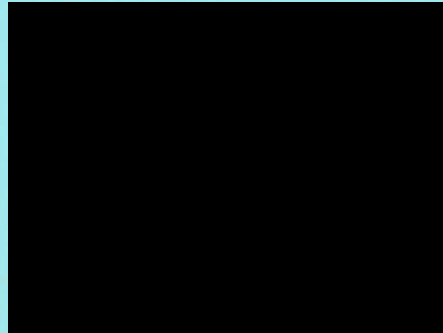
# Summing it up for the classroom



A Brilliant Example of rule 1 and a look at human behavior - we want to belong....



## Rule #4 - We Don't Pay Attention to Boring Things



Daydreaming is the result of the brain reverting to its normal state in the absence of engaging problems, rather than a pointless distraction, according to U.S. researchers

*Credit: iStockphoto*



Indiana University Survey of High School Student Engagement -Two out of three respondents (66%) in 2009 are bored at least every day in class in high school; nearly half of the students (49%) are bored every day and approximately one out of every six students (17%) are bored in every class.

It's about creating relationship...



\* You don't have to be a magician, you do need to have enthusiasm

## \*Rule #7 - Sleep - Sleep well, think well.

brain rules



“If you are a public speaker, you already know it is darn near fatal to give a talk in the mid-afternoon.”

“The brain is in a constant state of tension between cells and chemicals that try to put you to sleep and cells and chemicals that try to keep you awake.”

“The nap zone also is literally fatal: More traffic accidents occur during it than at any other time of day.”

Countless studies confirm the importance of sleep on learning

“Loss of sleep hurts attention, executive function, working memory, mood, quantitative skills, logical reasoning, and even motor dexterity.”

To which I say, other than that, it's really no big deal to be sleep deprived.

## We shouldn't stop napping after kindergarten

brain rules

Brain rules on the “nap zone” - “On the flip side, one NASA study showed that a 26minute nap improved a pilot’s performance by more than 34 percent. Another study showed a 45-minute nap produced a similar boost in the cognitive performance, lasting more than six hours.”

### Our Educational Take Away -

It is imperative for us to plan lessons which engage and involve students in the learning process especially during the nap zone - more on that in Rules 9 and 10.





\*Rule #8 - Stress - Stressed brains don't learn the same way.

\* We often do not know what our students are experiencing as **individuals** in their personal lives.

\* Frankly, our high-stakes testing emphasis doesn't help.

\* Japanese students know stress - Japan's response....





\* Meanwhile, in response to the mind-melting academic pressures on Japanese youth, the education ministry has been pushing students to reflect on the meaning and mission of their lives. Encouraging what it calls – Education of the Heart.



6:20

– Daniel H. Pink – A Whole New Mind, Chapter 1



Help your students De-Stress! You have a fun job -  
do they sense you enjoy it?

Think of a number  
between  
0 and 20.  
Add 32 to it.  
Multiply by 2.  
Subtract 1.  
Now close  
your eyes.  
It's dark Isn't it



\*Rule #10 - Vision - Vision trumps all other senses.

Vernal Fall in Yosemite National Park can be found by hiking the Mist Trail.

Sadly, 3 hikers were swept over this 317 foot drop the week after this was filmed.

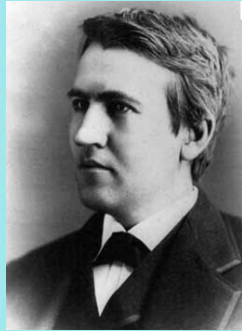
\* Vernal Fall, Yosemite National Park



truth be told, this slide is a shameless plug to reinforce rule 9 (sensory integration), with a dose of an emotional statement to boot.

## Who Said It?

\* “I have not failed. I have just found 10,000 ways that will not work.”



\* The person responsible for this quote was told by a teacher he was too stupid to learn anything and he should go in to a field where he could succeed by virtue of his pleasant personality.

Thomas A. Edison

## Is Edison's quote a statement of confidence?

- \* Does our educational system nurture and support Edison's type of thinking?



If you are not prepared to be wrong, you will never come up with anything original. - Sir Ken Robinson

## Rule 12 - We are Powerful and Natural Explorers

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- \* It goes back to our more primitive roots
- \* We thrive on hands-on, visual, exploratory learning.

In light of rule 12 (We are Powerful and Natural Explorers),  
be a High School Freshman

\* Walk me through the registration process - map out a 4 year plan....



You Must, you must, you must, you must.....



Take this, and this, and this, ...

There is no denying it, as an institution, we are highly prescriptive

For the Love of students... If you teach a You Must class, please don't use that as an excuse to not create engaging and meaningful learning environments.



## **Ponder this for a moment**

- \* We are doing this to students at precisely the same time in their lives they are rebelling (naturally) and wanting an explanation for everything they are asked to do.**
- \* Education is a guideline and rule driven institution**

What Edison said about rules....



*Hell, there are no rules here -  
we're trying to accomplish  
something.*

Thomas A. Edison

# One More Blank Slate Example



## COVERAGE SELECTION CHART

Direct Term Life Insurance Coverage at Group Rates for AAA Members

PREPARED FOR: ~~XXXXXXXXXX~~  
 CATEGORY: GROUP RATES  
 LEVEL: AAA LIFE EXCLUSIVE

First choose the coverage amount. Then find your age range under that amount and locate the monthly rates for non-nicotine or nicotine users.

FOR EXPEDITED PROCESSING, PLEASE  
 RETURN YOUR APPLICATION BY: 02/27/15

Questions? Call toll-free 1-800-974-1593

**NO MEDICAL EXAM NEEDED**

Benefit Amount: \$50,000.00					Benefit Amount: \$100,000.00				
Age of Applicant	Monthly Rates For: MALE		Monthly Rates For: FEMALE		Age of Applicant	Monthly Rates For: MALE		Monthly Rates For: FEMALE	
	Non-Nicotine User	Nicotine User	Non-Nicotine User	Nicotine User		Non-Nicotine User	Nicotine User	Non-Nicotine User	Nicotine User
18-34	\$10.43	\$18.36	\$9.44	\$16.52	18-34	\$12.61	\$27.29	\$10.49	\$23.09
35-39	\$11.54	\$22.04	\$10.56	\$18.88	35-39	\$13.68	\$35.72	\$11.64	\$26.24
40-44	\$13.76	\$31.51	\$12.72	\$23.92	40-44	\$18.89	\$50.48	\$14.71	\$32.54
45-49	\$18.96	\$42.12	\$15.31	\$29.38	45-49	\$28.34	\$73.54	\$18.93	\$47.31
50-54	\$29.38	\$59.39	\$20.57	\$41.93	50-54	\$47.24	\$103.94	\$30.44	\$71.49
55-59	\$41.93	\$90.38	\$30.20	\$58.67	55-59	\$73.40	\$167.06	\$44.13	\$104.00



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#### WELCOME!

Welcome to the TREES web site. Our goal is for this site to be a resource for educators and a place to celebrate success stories from TREES region Schools.

#### OUR SCHOOL DISTRICTS AND CAREER CENTERS

Coal City Unit District #1

Gardner South Wilmington H.S.

Grundy Area Vocational Center

Joliet Township H.S.D. #204

Lemont High School District #210

Lincoln-Way School District #210

Lockport Township H.S.D. #205



#### Presentations and Summaries

[System Updates Archived](#)

[Lessons/Samples](#)

[Assessments/Samples](#)

#### NEWS & INFORMATION

The Interactive Illinois CTE Fact Sheet is available in PDF form - Click the Icon Below

#### Are You Ready?

**✓ DIPLOMA**

**✓ READY**

**✓ SECOND**

Illinois project: 30,000 new training jobs available each year for the next 15 years.

Illinois project: 30,000 new training jobs available each year for the next 15 years.

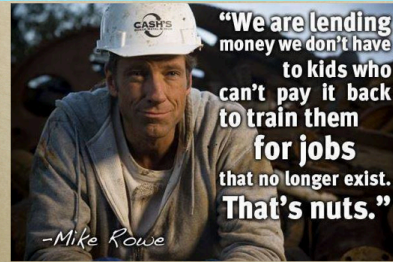
Illinois project: 30,000 new training jobs available each year for the next 15 years.

This Link takes you to the Interactive Fact Sheet Home Page and Demo Video



ISBE Link

# Shameless Plug - tomorrow at 11:00



## Today's Careers

### What Our Students Really Need to Know

Sorting through the minutia and targeting the skills our employers actually need for "gold collar" jobs

*Neal Kauffman & Brian Gordon  
Three Rivers Education For Employment System*



A parting thought and encouragement from a company that has done rather well since this ad aired.



Thank you very much for your time and more importantly,  
thank you for your efforts on behalf of students!

# Resources

\* *Brian Gordon --- [brian.gordon@jjc.edu](mailto:brian.gordon@jjc.edu) 815-727-2714*

\* *[www.cteintrees.org](http://www.cteintrees.org)*

\* *Brain Rules - John Medina*

\* *A Whole New Mind - Daniel H. Pink*

\* *Indiana University Survey of High School Student Engagement - [www.indiana.edu/~ceep/hssse/images/HSSSE\\_2010\\_Report.pdf](http://www.indiana.edu/~ceep/hssse/images/HSSSE_2010_Report.pdf)*

\* *[http://edge.ascd.org/\\_Abolish-the-Diploma/blog/1778850/127586.html](http://edge.ascd.org/_Abolish-the-Diploma/blog/1778850/127586.html) - Grant Wiggins*

\* *YouTube.Com - Sir Ken Robinson, Do Schools Kill Creativity? TED talk (excerpted),*

\* *<https://www.assistivetechnologytidbits.wikispaces.com/About+UDL>*

\* *YouTube.Com - Clips from Ferris Bueller's Day Off, Dead Poet's Society, [www.funniestcommercials.tk](http://www.funniestcommercials.tk), Apple Think Different commercial*

\* *Stock xchng - Royalty Free stock photography — <http://www.sxc.hu/home>*



# Another Example

Marketing and Profitability Activity: 9-12 A CED 3, K-12 MP.1, 3, 4 (among others)

The MIRN (Math I Really Need) Snack Mix Company assigns you to a team whose goal is to oversee the "launch" of the company's newest snack product.

MIRN's new snack product's **proposed** batch ratios are:

1 part Pretzels  
1 part Cheerios  
 $\frac{1}{2}$  part Cocoa Crunch cereal  
1 part Corn Chex cereal  
1 part Rice Chex cereal  
 $\frac{1}{2}$  part M&Ms



If we were to change the proposed batch ratio, any snack mixture we take to market must contain all of these ingredients. Each ingredient would have a minimum of .5 ounces in the 8 ounce bag while no ingredient could be more than 4 ounces.

1. Taste the product.
2. Brainstorm a name for the new product. \_\_\_\_\_

Packaging and Product Cost Data:

The product would be sold in 8-ounce packages.

Ingredient costs:	
Pretzels	\$3.99/20 oz.
Cheerios	\$6.49/120 oz.
Cocoa Crunch	\$2.99/20 oz.
Corn Chex Cereal	\$1.99/13 oz.
Rice Chex Cereal	\$1.99/13 oz.
M&Ms	\$8.49/42 oz.

3. How would a "real" business save money on product cost?

4. Based on the proposed batch ratio, calculate each ingredient's weight in an 8 ounce batch.

Pretzels	_____ oz.
Cheerios	_____ oz.
Candy Corn	_____ oz.
Corn Chex Cereal	_____ oz.
Rice Chex Cereal	_____ oz.
M&Ms	_____ oz.

Cost Considerations: Cost, Profit Margin, & Selling Price

5. What is the product cost of an 8-ounce package? \_\_\_\_\_
6. What would MIRN charge for an 8-ounce package if they wanted a 20% profit margin (based on product cost)? \_\_\_\_\_
7. What other costs (expenses) are factored into the selling price of this snack product for us to accurately determine our profit margin & or set our price?
8. What is the least expensive mixture we could produce if we were to alter the proposed batch ratio?
9. Food for thought - Would the formula we find in question 7 be the most profitable for us to bring to market? Why or why not?

**This IS higher level math and could go to even more complex levels if we were to incorporate nutrition labels, profit margins, sales data, etc...**

**More importantly: It is Relevant and Engaging for students. This is "Quadrant D" learning. It is CAREER READY MATH.**