


Chunk, Chew and Check:  
That's How the Brain Learns Best




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Please Share: Who's Here Today?

Please stand if...

- You are an elementary teacher
- A middle school teacher.
- A high school teacher
- Educational administrator
- Other



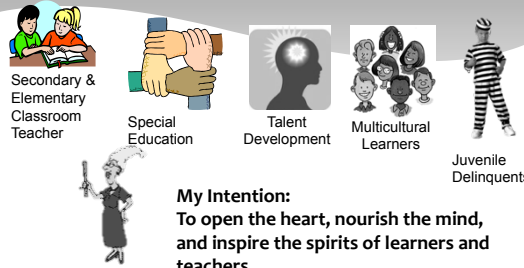
Please STAND If...

You are a visual learner? (You need to SEE it to learn it. May include writing it)

You are an auditory learner? (You need to hear it or talk it to learn it)

You are a kinesthetic learner? (You need to touch or move to learn. May also include writing it)

Kathleen's Teaching Journey



Secondary & Elementary Classroom Teacher

Special Education

Talent Development

Multicultural Learners

Juvenile Delinquents

Teacher of Teachers  
Teacher Researcher

**My Intention:**  
To open the heart, nourish the mind,  
and inspire the spirits of learners and teachers.



## Michelle's Teaching Journey

Michelle Leip -



- ✓ B.S. Elementary Education & Spanish
- ✓ 5<sup>th</sup> grade teacher in Title 1 school in southern California
- ✓ High school English teacher
- ✓ M. Ed. from Harvard in School Leadership
- ✓ KIPP – high performing charter school in urban or rural areas
- ✓ 5<sup>th</sup> grade teacher at a turn-around school in Boston
- ✓ researcher and author for Infinite Horizons –
- ✓ Peace Corps Response Volunteer – Teacher trainer
- ✓ ... now... continuing to support teachers and learners

## Today's Objectives: What's My Point and Why Am I Making It?

- \* We now know how the learning brain works and what it needs to succeed.
- \* Varied pathways to learning = Differentiate
- \* We need to design and plan our lessons in ways that the brain learns best!



## Establish Class Routines and Norms

### ROUTINES

- \* Chat Chums
- \* Hand Raise and 1,2,3 Eyes on Me
- \* Notes Making for strategies we learn today. 😊


### NORMS

- \* Be RISK TAKERS! Ask Questions
- \* Professional use of technology



Collaboration builds learning, responsibility, and students ownership


## Let's practice...



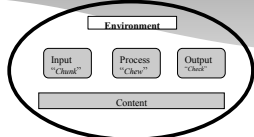
- Decide who's Chat Chum A and Chat Chum B.
- Knee to Knee
- Eye to Eye
- Share something you know about how the brain learns.
- Stand and Share

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## If we are going to get all students to the same learning target



Identify Your Students  
**LEARNER PROFILE**



Vary the **PATHWAYS**  
**Chunk, Chew and Check**



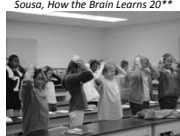
Know Your Learning Target  
**C U KAN**

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The more parts of the brain involved, the easier and more likely a memory will be retrieved. Physical movement has an inordinate amount of impact on creating and accessing memory. Moving releases acetylcholine, a neurotransmitter that aids in planting and retrieving long term memory. In short...


**Movement helps cement memory!**

Sousa, *How the Brain Learns* 20\*\*




## Vary the Pathways!


### Help ALL Students Reach the Learning Target



**CHUNK - Input**  
***Chunk:** How students acquire information*



**CHEW – Process**  
***Chew:** How students process new information*



**CHECK - Output**  
***Check:** How students show what they know they know*

Kryza, Duncan, Stephens 2008

## The Learning Brain

- \* We are at an exciting and challenging crossroads in education. Science, especially neuro-imaging, is giving us real-time visual images of how the brain learns and which teaching strategies most successfully effect the learning process.

\* Judy Wills, Neurologist and Teacher



Chunk, Chew and Check - that's how the brain learns best!



**CHANT IT, REMEMBER IT!**

For every 10 minutes you teach something new...

The brain needs one to two minutes to chew!

## Time to Chew and Check!

- \* With your Chat Chum, you have one minute to come up with **movements** or a **picture** to help you remember...

**\* For every 10 minutes you teach something new, the brain needs one or two minutes to chew!**

## Intentional and Transparent

- \* Intentional: **I** know why I'm doing what I'm doing.



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- \* Transparent: My **STUDENTS** know why I'm doing what I'm doing.



## ILS: Choral Chanting and Reading:

Through repeated reading of the text and chanting of key terms, the student becomes a more fluent reader, which allows for increased content comprehension.



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## How the Brain Learns: Make it Visible

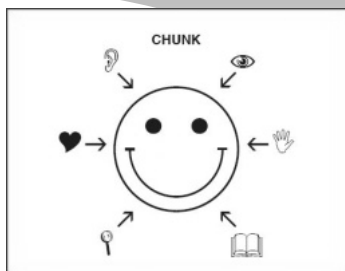
Learning New Information:

1. Chunk (INPUT)
2. Chew (PROCESS)
3. Check (OUTPUT)

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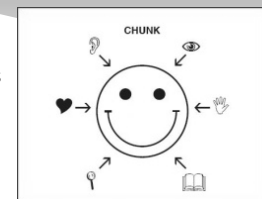


## Chunk



## Chunk Tips

- \* Smaller Chunk, More Time to Chew
- \* Series of Chunks and Chews before Checks
- \* Vary the Modalities
- \* Offer Choice
- \* Readiness Levels



## Think Series of Chunks and Chew Before Checks (Formative or Summative)

- \* Sabrina was teaching a vocabulary lesson on to 5<sup>th</sup> graders.
- \* She went over the new words on the board.
- \* She then assigned a worksheet with drill and practice and floated about the room as the students worked independently on their worksheets.
- \* They weren't misbehaving, but they weren't CHEWING in ways that were engaging or really made the learning stick.

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## Daily Lesson: Chunk, Chew and Check

**Chunk 1** Teacher gives students the new word and has them Choral Chant it three times along with the definition.

**Chew 1** Students turn and talk partners and each partner says the word and the definition. (Or each partner could draw a picture of the word, then share their pictures as they explain what they mean.)

**Formative Check:** Teacher walks around to observe if students are able to do the work.

**Chunk 2** Teacher gives the next word and students Choral Chant.

**Chew 2** Students do a problem from the book with table partners.

**Formative Check:** Teacher walks around to observe if students are able to do the work.

**Chunk 3** Teacher explains a word game she wants them to play in groups.

**Chew 3** Students work in groups to play the word game.

**Check:** Students create sentences using their new words.

## Take a Look (Visual Chunk)

- Post a collection of photographs or charts in various locations around the class that are related to the learning target.
- Like an art exhibit, have students walk and study the photos without talking.
- Give them suggestions or a guiding question to focus their observations. Allocate a set amount of time at each exhibit with a timer or using music.
- When all students have observed all exhibits select a Chew activity for processing what they have seen.



## Focus Question



What do these pictures tell us about our world, how we connect, the meaning behind the handshakes?



### HONOR ALL LEARNERS


\* I think in pictures. Words are like a second language to me. I translate both spoken and written words into full color movies, complete with sound, which runs like a VCR tape in my head. When someone speaks to me, his words are instantly translated into pictures. Language-based thinkers often find this phenomenon difficult to understand.

\* Temple Grandin, PhD

How could you enhance the **CHUNK** of your lessons with visuals?

WALK AND TALK: Movement and Talk helps cement learning

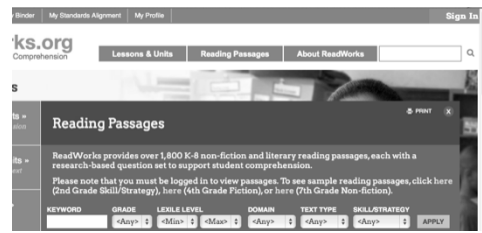


## Brain Pop: www.brainpop.com



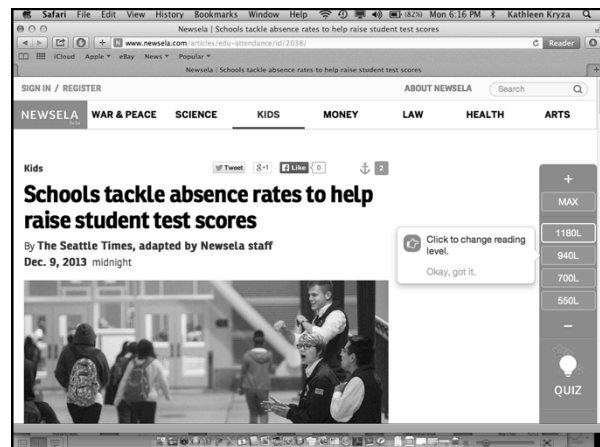
- \* Great technology can make your CHUNK pop!
- \* Khan Academy
- \* United Streaming

## Chunk by Readiness ReadWorks.org



www.inspiringlearners.com 2013

## Scholastic Action Magazine



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From frustration...	...to understanding
His elder daughter's nephritis was comforted with chronic hypertension and sciatic neuropathy.	His elder daughter's kidney disease was a disease that happens along with long-lasting high blood pressure and leg-nerve related nerve disease.

You can also enter a website URL in the yellow box, and you'll see a simplified version of that web page. Get started fast—do this [demo](#) or watch the [site overview video](#) and be a Rewordify.com expert in less than ten minutes.

**Rewordify.com**


...at birth (created) on this continent, a new nation, **conceived** [understood/created/gave birth] in Liberty, and dedicated to the **proposition** [suggestion (or plan)] that all men are created equal.

How we **are engaged in** [are involved in] a great civil war, testing whether that nation, or any nation so **conceived** [understood/created/gave birth] and so dedicated, can long **endure** [last through/tolerate]. We are met on a great battle-field of that war. We have come to dedicate a portion of that field, as a **final resting place** [grave] for those who here gave their lives that that nation might live. It is **altogether** [completely] fitting and proper that we should do this.

But, in a larger sense, we can not dedicate -- we can not **consecrate** [bless] -- we can not **hallow** [make holy] -- this ground. The brave men, living and dead, who **struggled** here, have **consecrated** [blessed] it, far above our poor power to add or **deduce** [take away]. The world will little note, nor long remember what we say here, but it can never forget what they did here. It is for us the living, rather, to be dedicated here to the unfinished work which they who fought here have **thus far** [so far] so **nobly** [honorably] advanced. It is rather for us to be here dedicated to the great **task** [job] remaining before us -- that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion -- that we here highly resolve that these dead **shall** [will] not have died **in vain** [without success (or without purpose)] -- that this nation, under God, **shall** [will] have a new birth of freedom -- and that government of the people, by the people, for the

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## Chat Chums



**CHUNK: How do you need to grow?**

- Smaller Chunks, More time to chew?
- More pictures, technology, movement?
- Varied readiness levels?
- How could you offer Chunk Choices?

## Teaching for Transfer

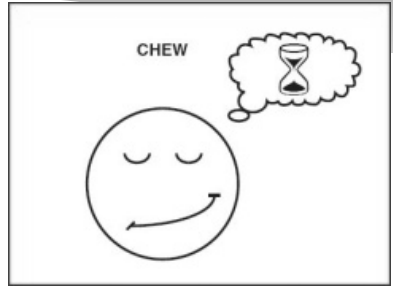
If we want learning to stick, we have to make it sticky.



ILS Make Learning Stick!

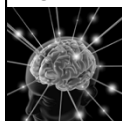
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## Chew



## Hazy-Gazey Eyes Mean It's Time To Chew!

### BIG IDEA



## Chew: Build Collaboration

- \* Think about it...
- \* Note the ways we have collaborated and chewed on new learning so far today?
- \* Note that we used varied learning modalities
- \* Chat Chum Partners
- \* Job Share
- \* Choral Chanting
- \* Movement/TPR
- \* Walk-Talk-Share
- \* Note Making
- \* Other...



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Free Resources/templates

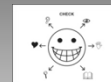
### Chunk, Chew, Check Planner

The Key teaching this way is to build chunk, chew and check time into your lesson plans.



#### Planner: Chunk, Chew, and Check

Understand: _____	
Know: _____	
Able to do: _____	
Chunk - Info IN	
Chew - Process	
Check - Info Out	

## Check Tips



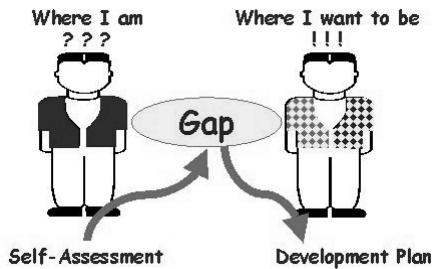
- \* Formative and Summative
- \* **Students Need to Self-assess**
- \* Balance between traditional tests and quizzes and performance-based assessments.

### Three Finger Self-Assessment

How much do you have students involved in self-assessing in your classroom?

### Self-assessment is KEY to becoming metacognitive and self-regulating




The diagram illustrates a cycle of self-assessment and development. On the left, a figure labeled 'Self-Assessment' is shown with 'Where I am' and '???' above it. An arrow points from this figure to a central oval labeled 'Gap'. Another arrow points from the 'Gap' to a figure on the right labeled 'Development Plan', which has 'Where I want to be' and '!!!' above it.

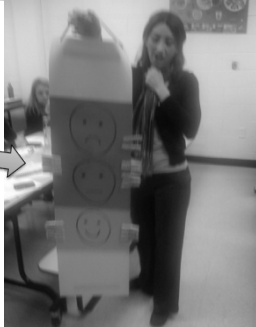
### Self assessment = Self Regulation

We must constantly remind ourselves that the ultimate purpose of evaluation is to have students become self evaluating. If students graduate from our schools still dependent upon others to tell them when they are adequate, then we've missed the whole point of what education is about.

— Costa and Kallick, 1992





### How am I Doing? Elementary Self Assessment Chart



Students put clips with their names to show where they are in their understanding

### Traffic Light Secondary Self-Assessment

**Students post their person in the color of the Traffic Light that matches their level of understanding**

### Metacognition Cards (Paint Chips)

It's Crystal Clear

It's Bit Hazy

I'm in a Fog!

### Exit Cards

Exit Card

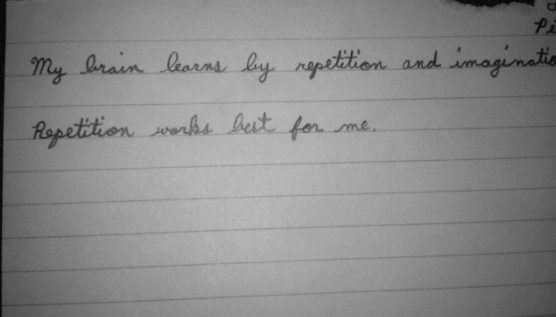
Write down anything we learned today that was confusing to you.

On a scale of 1 (low) to 5 (high) how well do you Understand the following...

If you understood everything really well today, would you be willing to help others?  
 Yes \_\_\_\_\_ No \_\_\_\_\_

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### Learning Style Exit Cards



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## Where Will You Grow?

- Choose one area to focus on to CHECK for understanding and growth by having students self-assess:

- \* What format will you use to involve students in CHECKING by self-assessing?

- \* Chart
- \* Traffic Light
- \* Paint Chips
- \* Exit Cards
- \* Other



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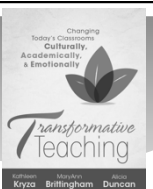
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Thank you!! ☺  
**KEEP IN TOUCH:**

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**Thank You, Amazing Teachers!!!**

