


**MARZANO**  
Research Laboratory

**The Art and Science of Teaching  
Design Questions 2 and 3**

888.849.0851 marzanoresearch.com  MARZANO Research Laboratory

### Who is in the room?

- Original members of your school teams from last year...
- New members of your school teams starting this year...
- New to your school and your school's team this year...

888.849.0851 marzanoresearch.com  MARZANO Research Laboratory


### Who is in the room?

- San Francisco Giant fans
- KC Royals fans

888.849.0851 marzanoresearch.com  MARZANO Research Laboratory


### Materials and Logistics.....

- Handout Packets:
- Books: please bring for each session
- Two structured breaks each day
  - One AM and one PM
- Lunch 11:30 to 12:45
- Team planning time 2:30
- End formal session around 3:00

888.849.0851 marzanoresearch.com  MARZANO Research Laboratory

### A Few Norms For Our Work

- Phones on silent please
- Return from breaks on time
- Avoid sidebar conversations
- Misery is optional, please meet your needs

888.849.0851 marzanoresearch.com  MARZANO Research Laboratory

### Our Training Goals: 3 Sessions

- Continue our study of The Art and Science of Teaching as a researched-based, common language for instruction and professional reflection.
- Understand and practice the concept of Self-Reflection and Self-Evaluation as a professional educator.
- In the end: Establish a common language of instructional practice for your schools.

888.849.0851 marzanoresearch.com  MARZANO Research Laboratory

## Your task as a team

- Which of these activities, ideas, or concepts will you take back to your school.
- Different decisions for different schools based on the needs and practices of your colleagues.
- The only way to do it wrong is to not do it.

888.849.0851 marzanoresearch.com



## Your task as individuals

- Teachers: Pick something and engage in deliberate practice with it between now and the next time we meet.
- Principals: Pick an idea you will look for and track as a practice across your campus. (Record your observations and get assistants involved as well)

888.849.0851 marzanoresearch.com



## Attention and Refocus Signal

- I will move front and center in the room.
- Announce time remaining in activity.
- Count down from 5 to 0 out loud.
- At “Zero” back in your seats, conversations are done and we are ready to move on.
- If anybody isn’t ready, I’ll just wait....

888.849.0851 marzanoresearch.com



## Groups We Will Work With Today

- Table Team (majority of our work today)
- Table Facilitators = the person with the shortest commute to work (in distance)

888.849.0851 marzanoresearch.com



## Facilitator Tasks

- Structure table discussions so everyone has an opportunity to speak.
- Assign roles for group members when they are needed.
- Get your table team back from breaks on time.

888.849.0851 marzanoresearch.com



## Begin With Where We Have Been

- Structured conversations to review some of the critical content we studied last year
- And to hear from some of you about what you have done specifically at your school
- Connect our new learning to our prior learning.


888.849.0851 marzanoresearch.com



Inside the box or inside the circle?

Pockets of Effective Practice

Great Schools:  
90% of staff  
90% of time

888.849.0851 marzanoresearch.com 

What is the most significant factor in student learning?



...the teacher in the classroom!

888.849.0851 marzanoresearch.com  concrete strategies sustainable

To Improve Schools....

- We must raise the bar of least effective to ensure all classrooms are effective and using strategies that help students learn.

888.849.0851 marzanoresearch.com 


A Key Factor In Great Schools...

- Leaders Teach
- And
- Teachers Lead


888.849.0851 marzanoresearch.com 

Where should a school or district begin?

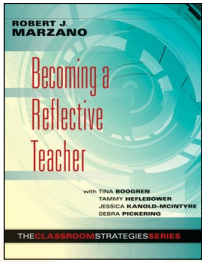
- Develop a common language of teaching*
- Provide opportunities for focused feedback and practice
- Provide opportunities for observing and discussing effective teaching
- Require individual teacher growth and development plans on a yearly basis

888.849.0851 marzanoresearch.com 


**The Art and Science of Teaching**

888.849.0851 marzanoresearch.com 

**Extending the research base**




Look at pages 12 and 13 Reflective Teacher book please.


888.849.0851 marzanoresearch.com 



888.849.0851 marzanoresearch.com 

**Three Segments For Every Lesson**




888.849.0851 marzanoresearch.com 

**Lesson Segments**

“We use the term lesson segment because it defines a unit of analysis that is particularly useful when providing feedback to teachers.”

Robert Marzano  
Effective Supervision: Supporting the Art and Science of Teaching

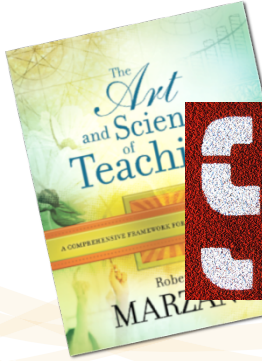
888.849.0851 marzanoresearch.com 

**Critical Points to Remember...**


- The lesson segments do not necessarily occur in a linear fashion.
- They are interdependent and ongoing.
- Strategies for one segment often work for other segments when used correctly.



888.849.0851 marzanoresearch.com 




■ Nine “design questions” that teachers ask of themselves as they plan instruction

888.849.0851 marzanoresearch.com 

LESSON SEGMENTS INVOLVING ROUTINE EVENTS	
Design Question 1	What will I do to establish and communicate learning goals, track student progress, and celebrate success?
Design Question 6	What will I do to establish or maintain classroom rules and procedures?
LESSON SEGMENTS INVOLVING CONTENT	
Design Question 2	What will I do to help students effectively interact with new knowledge?
Design Question 3	What will I do to help students practice and deepen their understanding of new knowledge?
Design Question 4	What will I do to help students generate and test hypotheses about new knowledge?
SEGMENTS ENACTED ON THE SPOT	
Design Question 5	What will I do to engage students?
Design Question 7	What will I do to recognize and acknowledge adherence and lack of adherence to classroom rules and procedures?
Design Question 8	What will I do to establish and maintain effective relationships with students?
Design Question 9	What will I do to communicate high expectations for all students?

888.849.0851 marzanoresearch.com MARZANO Research Laboratory



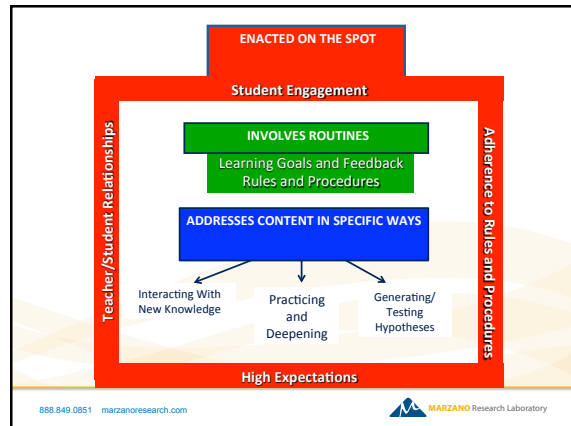
**Instructional Elements = categories of classroom practice that relate to how the brain learns and what we know as best practice through 40 years of research**

888.849.0851 marzanoresearch.com MARZANO Research Laboratory

## Elements and Strategies

- Elements are categories of instructional best practice....
- Strategies are the ways teachers choose to enact an element in the classroom....
- This relationship provides “Defined Autonomy” for teachers in their professional practice.

888.849.0851 marzanoresearch.com MARZANO Research Laboratory



**We started here last year...  
Routines are the backbone of all that occurs in a classroom.**

**INVOLVES ROUTINES**  
Learning Goals and Feedback Rules and Procedures

**Design Question 6: Rules and Procedures**

**Design Question 1: Learning Goals, Tracking Student Progress Celebrating Success**

888.849.0851 marzanoresearch.com MARZANO Research Laboratory

## One of our main focuses

- Communicating Clear Learning Goals To Students...
- What do you remember about this element?

888.849.0851 marzanoresearch.com MARZANO Research Laboratory

## Communicating Learning Goals

Why is this so critical for learning?

- Gives meaning to the class activities
- Establishes “True North” for learners



888.849.0851 marzanoresearch.com



## With the brain in mind...

Students need to:

1. See the goal
2. Hear the goal
3. Do something with the goal such as:
  - Unpack key vocabulary in the goal
  - Discuss how it connects to previous learning
  - Write or Speak it in their own words
  - Think about questions it brings to their mind

888.849.0851 marzanoresearch.com



## PLC teams and The Art and Science

4 Questions of a PLC:

1. What do we want our students to learn?
  - 1A. How will we teach it to them?
2. How will we know if they have learned it?
3. What will we do if they have not?
4. What will we do if they already know it?

888.849.0851 marzanoresearch.com



## Organize learning goals into a scale

- Advanced = 4.0 More complex learning goal
  - Above and beyond the target goal
- Proficient = 3.0 target learning goal
  - At the level identified in the standards
- Progressing = 2.0 simple learning goal
  - Foundational knowledge needed to reach level 3

888.849.0851 marzanoresearch.com



## Atmospheric Processes and Water Cycle

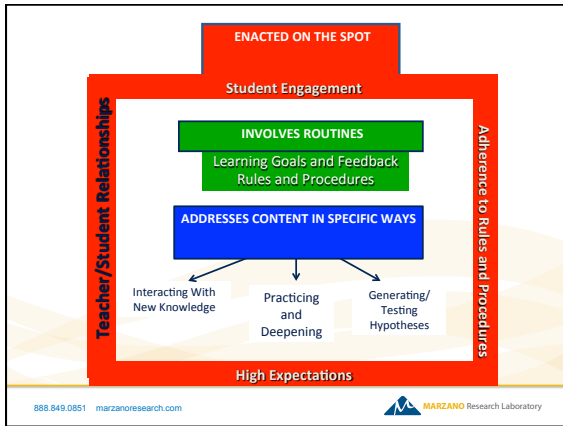
<b>4</b>	Infer relationships regarding atmospheric processes and the water cycle.
<b>3</b>	An explanation of: <ul style="list-style-type: none"> <li>• How the water cycle processes impact climate changes</li> <li>• The effects of temperature and pressure in different layers of Earth's atmosphere</li> </ul>
<b>2</b>	<ul style="list-style-type: none"> <li>• Recognize and recall basic terms such as: climatic patterns, atmospheric layers, stratosphere, troposphere.</li> <li>• Recognize or recall isolated details such as:                         <ul style="list-style-type: none"> <li>• Precipitation is one of the processes of the water cycle.</li> <li>• The troposphere is one of the lowest portions of the Earth's atmosphere.</li> </ul> </li> </ul>

## Last year we also explored

DQ 8  
Establishing and Maintaining Effective  
Teacher Student Relationships

888.849.0851 marzanoresearch.com





We also studied

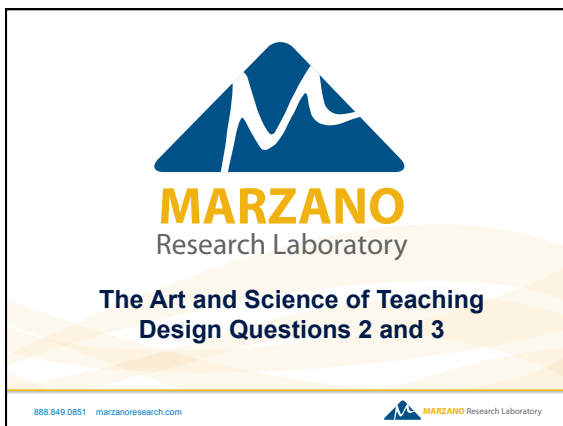
Identifying and Teaching Content Vocabulary

Six step process for vocabulary instruction

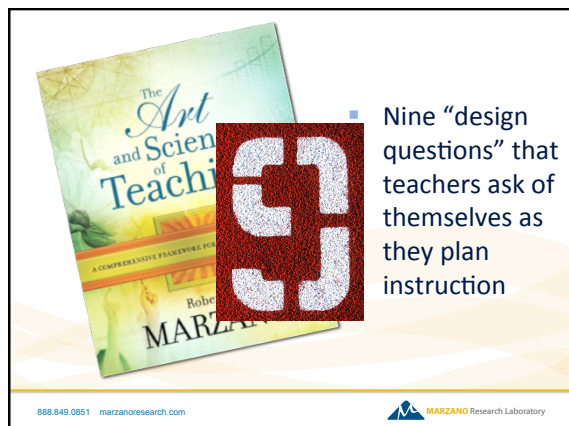
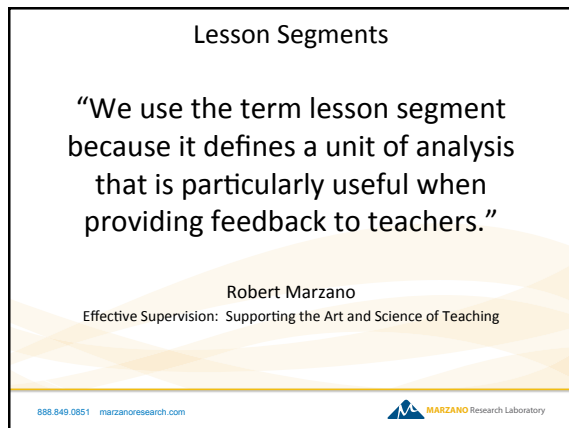
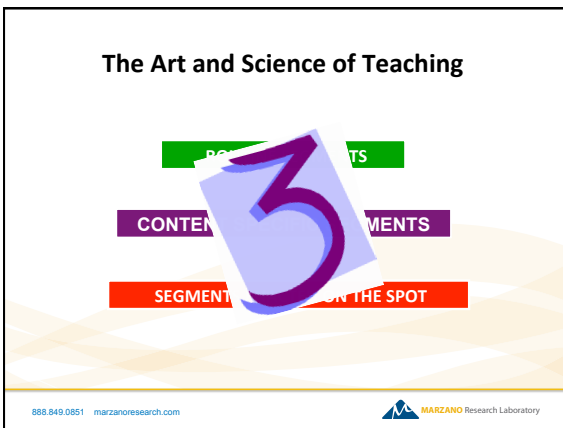
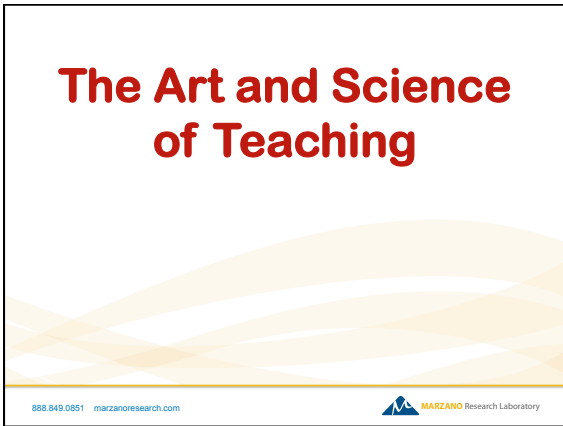
888.849.0851 marzanoresearch.com MARZANO Research Laboratory

- Organize learning goals into a scale
- **Advanced = 4.0** More complex learning goal
    - Above and beyond the target goal
  - **Proficient = 3.0** target learning goal
    - At the level identified in the standards
  - **Progressing = 2.0** simple learning goal
    - Foundational knowledge needed to reach level 3
    - Will almost always contain content vocabulary
- 888.849.0851 marzanoresearch.com MARZANO Research Laboratory


Atmospheric Processes and Water Cycle	
<b>4</b>	Infer relationships regarding atmospheric processes and the water cycle.
<b>3</b>	An explanation of: <ul style="list-style-type: none"> <li>• How the water cycle processes impact climate changes</li> <li>• The effects of temperature and pressure in different layers of Earth's atmosphere</li> </ul>
<b>2</b>	<ul style="list-style-type: none"> <li>• <b>Recognize and recall basic terms such as: climatic patterns, atmospheric layers, stratosphere, troposphere.</b></li> <li>• Recognize or recall isolated details such as:                             <ul style="list-style-type: none"> <li>• Precipitation is one of the processes of the water cycle.</li> <li>• The troposphere is one of the lowest portions of the Earth's atmosphere.</li> </ul> </li> </ul>



- Where should a school or district begin?
- Develop a common language of teaching*
  - Provide opportunities for focused feedback and practice
  - Provide opportunities for observing and discussing effective teaching
  - Require individual teacher growth and development plans on a yearly basis
- 888.849.0851 marzanoresearch.com MARZANO Research Laboratory









**Elements = categories of classroom practice that relate to how the brain learns and what we know as best practice through 40 years of research**

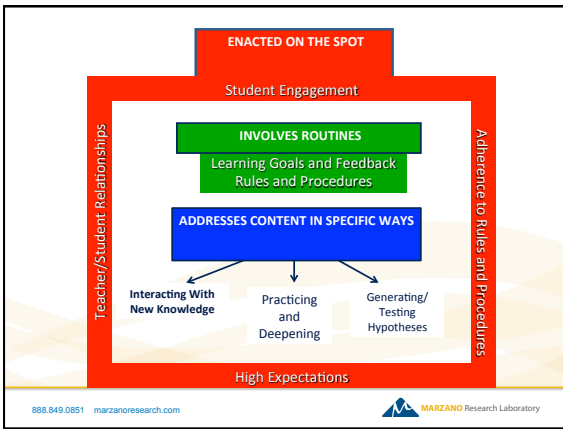
**Extended The Art and Science research**

888.849.0851 marzanoresearch.com 


### Elements and Strategies

- Elements are categories of instructional best practice....
- Strategies are the ways teachers choose to enact an element in the classroom....
- This relationship provides “Defined Autonomy” for teachers in their professional practice.


888.849.0851 marzanoresearch.com 



**Design Question 2: What will I do to help students effectively interact with the new knowledge?**

888.849.0851 marzanoresearch.com 


**Design Question 2: What will I do to help students effectively interact with new knowledge?**

888.849.0851 marzanoresearch.com 

### Elements For New Content Instruction

**Page 2 (13) of you handout**

- Start with Solo Thinking
- Becoming a Reflective Teacher Book
  - Review the 8 elements for teaching new knowledge...pages 191 to 198

888.849.0851 marzanoresearch.com 

## Solo Thinking First

- Preview each of the 8 New Knowledge elements....
- As you think about each element use the following coding system on your handout.

888.849.0851 marzanoresearch.com



## Code Current Practices

- ★ Elements you use most often, then list and briefly describe the strategies you use for this element.
- Elements you use sometimes but not regularly, and list any strategies you use.
- ✓ Elements you don't often or ever use.

888.849.0851 marzanoresearch.com



## Close Partner Discussions

- When I say go:
- Organize into groups of 3 or 4 (but no more than 4)
- Compare and contrast your use of these 8 elements
- Share and record strategy ideas you currently use
- Add new ideas to your own.

888.849.0851 marzanoresearch.com



## Art and Science of Teaching Design Question 2

- These elements are not necessarily “new”
- The question is....are they common practice within your classroom?
- “Common sense is not always common practice”....Stephen Covey

888.849.0851 marzanoresearch.com



## We will explore sample strategies in all 8

Look for this key point as we do:

1. How do many of these elements directly relate to the CC standards?

888.849.0851 marzanoresearch.com



## Identifying Critical Information

- Use “hot” colors to draw attention to specific topics or words.
- The brain is naturally drawn to **Red**, **Orange**, and **Yellow**.
- There is a deep body of research on these as attention getters.

888.849.0851 marzanoresearch.com





## Identifying Critical Information

- Use coding systems for students as they are taking notes or reading.
- Underline critical points of information
- Circle key words or ideas
- Draw arrows to connect important ideas

888.849.0851 marzanoresearch.com



## Identifying Critical Information

- Use coding systems for students as they are taking notes or reading.
- Underline critical points of information
- Circle key words or ideas
- Draw arrows to connect important ideas

888.849.0851 marzanoresearch.com



## Teach And Use Active Reading Strategies

### Identifying Critical Information

888.849.0851 marzanoresearch.com



## Teach Students To Use Active Reading

888.849.0851 marzanoresearch.com



## Active Readers...


- Have highlighters, sticky notes, pens at their disposal to mark their own copies
- Develop questions of their own while reading the text
- Summarize the reading along the way; not just at the end
- Make relevant connections to personal experiences and learning goals

888.849.0851 marzanoresearch.com



### Use Reading Code Structures


- ★ Phrase that stands out.
- Highlight** or underline powerful sentences.
- Circle related concepts and connect them.
- ✓ A word or concept that doesn't make sense to you.

888.849.0851 marzanoresearch.com 

### Use two column reading logs

Important Ideas	Information I found


### Use Close Reading?

Teach students to “Read like Detectives.” 

↓


Identify critical information contained in different types of text.

What does a detective do that can be compared to a reader engaging with a text?


888.849.0851 marzanoresearch.com 

### Identifying Critical Information

- Content Vocabulary is foundational to everything we do in all subject areas.
- It has to be identified as critical input and specifically taught as such.


888.849.0851 marzanoresearch.com 

### Teaching Content Vocabulary is a strategy for this element.

888.849.0851 marzanoresearch.com 

### The Power of Words...

- Words are labels for entire packets of knowledge in the brain.
- They also make the connection points for cross-curricular understandings.

888.849.0851 marzanoresearch.com 

## Table Team Discussion

- What examples can you come up with?
- Think of content specific vocabulary terms that can serve as connection points for cross-curricular understandings.

888.849.0851 marzanoresearch.com



## Organize students to interact with new knowledge

888.849.0851 marzanoresearch.com



## Grouping and Regrouping Students

- Please look at the reflective scale for this element.....**page 192**
- This is the element where you use your cognitive routines AKA student grouping strategies. (DQ 6)
- Diads and Triads.....
- Groups not larger than 5

888.849.0851 marzanoresearch.com



## Previewing new content

- Students work with new content prior to formal presentation or critical input by the teacher.
- Absolutely Critical for those coming with little or no background knowledge.

888.849.0851 marzanoresearch.com



## Please find the compendium of strategies for previewing

- Page 106 and 107 Reflective Teacher Book
- Please browse these strategies briefly....

888.849.0851 marzanoresearch.com



## New Learning Occurs Best When..


- Learners have a basic, personal connection with a new concept.
- Have an opportunity to do their own thinking and attach learning to their own experiences.
- The brain is stimulated to find possible previous patterns that relate to new learning.
- Smilkstein; We're Born to Learn 2003


888.849.0851 marzanoresearch.com



## Previewing Strategies


- “What do you think you know?”
- “Overt Linkages”
  - Connect with previous knowledge
  - Draw direct connections



888.849.0851 marzanoresearch.com 


## Divergent and Convergent Thinking

- Divergent Thinking:** Pure brainstorming, generating ideas at a rapid pace, all ideas make the list, none are rejected during this phase. (30 to 60 seconds)
- Convergent Thinking:** Deliberate review and discussion of the ideas generated during the Divergent process.

888.849.0851 marzanoresearch.com 

## During Convergent Thinking

- Groups review and discuss each idea generated in Divergent Thinking.
- Expand on the knowledge of each item they generated.
- May decide to drop some items from the list during the review.


888.849.0851 marzanoresearch.com 

### Anticipation and reaction guide


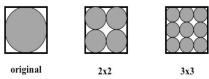
Use the following anticipation guide to preview your reading assignment (first column).


- Before reading, mark whether you agree or disagree with each statement.
- After reading, fill in the page number where you found the answer to each statement.
- Reflection: were you correct? If not, what did you learn?

Statement	Agree/disagree	Page	Reflection
A skier going down hill gains both potential energy and kinetic energy.			
Water held in a lake behind a dam does not have energy until it starts moving.			
Fossil fuels include petroleum, coal and natural gas.			
When a rolling soccer ball slows down, its kinetic energy is lost forever.			
Appliances that are more energy efficient should run cooler than others.			


888.849.0851 marzanoresearch.com 


Before		Statement	After	
Agree	Disagree		Agree	Disagree
		1. An equilateral triangle and a square are both regular polygons.		
		2. A regular polygon could have 13.5 sides.		
		3. A square with sides that are 4 metres long will also have a diagonal that is 4 metres long.		
		4. All the diagonals in a regular polygon have the same length.		

Before		Statement	After	
Agree	Disagree		Agree	Disagree
		1. The total length of the outside curves (i.e. the bold parts) is 3 times the circumference of one of the circles. 		
		2. You will have more pizza to eat if you buy the original on the left instead either of the other two choices.  original      2x2      3x3		
		3. If you double the length of each side of a square, then the area is also doubled.		

888.849.0851 marzanoresearch.com 


## Chunking Content Into Digestible Bites




888.849.0851 marzanoresearch.com 


## Making **Chunking** Decisions

- Using content expertise, teachers must determine the nature and size of information chunks.
- Teachers have to know their students and their level of understanding in the content.
- Remember what it was like to learn it for the first time????

888.849.0851 marzanoresearch.com 


## Factors that can help guide decisions on chunking.

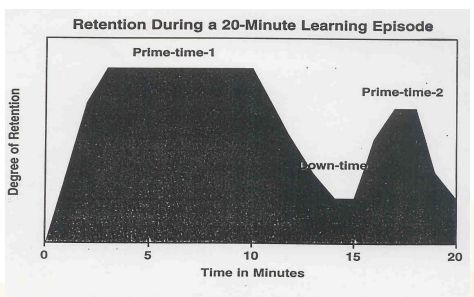


888.849.0851 marzanoresearch.com 

## Primacy-Recency Effect


- During a learning episode we remember best that which occurs first.
- Second best that which comes last.
- And least that which comes just past the middle.

888.849.0851 marzanoresearch.com 



*Figure 3.6. Degree of retention during a 20-minute lesson.*


David Sousa – “How the Brain Learns”

888.849.0851 marzanoresearch.com 

## Capacity of Working Memory

- How many chunks of new knowledge can your learners handle?
- It differs with the age of your learner.

David Sousa – “How the Brain Learns”

888.849.0851 marzanoresearch.com 

## Working Memory and Age:

Age Capacity of Items In Working Memory	Minimum	Maximum	Average
Age 5	1	3	2
Age 14	3	7	5
Age 18	5	9	7

David Sousa – “How the Brain Learns”

## Test Your Working Memory

- I will show you a string of numbers for 3 seconds, then take it away.
- Memorize it and try and rewrite the number once it disappears.

## Test your working memory

- 3 8 7 9 6 4 5
- Write the number
- 3 8 7 9 6 4 5

## Try one more

- 8 3 5 7 2 0 1 9 6
- Write the number
- 8 3 5 7 2 0 1 9 6

## Processing New Information

## A Few Processing Strategies

- Jigsaw
- Reciprocal Teaching
- Last Word Discussion



## Jigsaw

- Divide a piece of reading into similar sized chunks of information.
- Assign each chunk to a student to read and then summarize the key points.
- Each student then takes a turn explaining the summary of their section to the group.
- Group members record information from each explanation
- Groups of 3 or 4 work best.

888.849.0851 marzanoresearch.com



## Reciprocal Teaching Protocol

- Use with reading in shorter chunks
- Requires teachers to strategically group learners and assign specific roles for the strategy
- Helps include low readers in content area reading.

888.849.0851 marzanoresearch.com



## Content Reading Protocol

- Reciprocal Teaching ( allows you to differentiate with multiple reading levels if you need to do so)

888.849.0851 marzanoresearch.com



## Reciprocal Teaching

- Small groups of three or four students
- Assume we are differentiating for various reading levels.
- Student A = Strongest Reader in the group
- Student A reads the information aloud to the group in small, natural chunks. (Teacher determined)

888.849.0851 marzanoresearch.com



## Reciprocal Teaching

- Small groups of three or four students
- Student B summarizes what he/she heard as student A was reading.
- Student B can ask for portions to be re-read to confirm their thinking.

888.849.0851 marzanoresearch.com



## Reciprocal Teaching

- Students C or D = (Can perform many different tasks to interact with the text)
- Add to or specifically confirm the summary
- Ask clarifying questions about the reading or the summary
- Give real life examples relating to the reading.
- Infer where they think the author might be going next....

888.849.0851 marzanoresearch.com



## Reciprocal Teaching

- At the end of the reading, the entire group works together to develop summary points from the reading....
- OR, provide a title for the reading....
- OR, answer questions about the reading...
- OR, whatever task you need them to do next to move all of them forward.

888.849.0851 marzanoresearch.com



## Last Word Protocol

- Group students in 4s or 5s.
- Each reads, listens, or watches, a common piece of information.
- As they do this, they identify key points for discussion with their group.
- Must identify as many points for discussion as they have members in their group.

888.849.0851 marzanoresearch.com



## Last Word Protocol

- Discussion protocol:
- Select a student to start, he/she takes 15 seconds to discuss one point they selected.
- Clockwise around the table, each of the other groups members makes a one sentence reaction to the point that was made.

888.849.0851 marzanoresearch.com



## Last Word Protocol

- Discussion protocol continued:
- When the turn moves around the group and gets back to the person who made the point....
- That person sums up the opinion of the group based on the round of conversation.

888.849.0851 marzanoresearch.com



## Last Word Protocol

- Use this with anything, not just reading.
- Great way to get deeper discussion on a video or audio segment.
- Effective for any content....

888.849.0851 marzanoresearch.com



## HS Art Example

- Asks students to view and study a piece of art work in the classroom or on line.
- Uses the same protocol but instead of reading they are observing and looking for elements of art and offering their critique.
- Multiple elements in each piece and they must look for them.

888.849.0851 marzanoresearch.com



## Elaborating On New Information

- Questioning Strategies....
- These are critical for helping students elaborate on new knowledge.

888.849.0851 marzanoresearch.com



## Questioning

One of the most effective and misused strategies in all of teaching.

888.849.0851 marzanoresearch.com



## Question Research

- Please find the last page of the handout with the four quadrants of questioning.
- Solo thinking first.....

888.849.0851 marzanoresearch.com



The most common form of inductive and deductive reasoning....

- Humans do the following:
- Gather facts and draw initial conclusions.
- Listen to the conclusions of others.
- Affirm or expand our own conclusions.
- **We call it GOSSIP.**

Kilgo 2009

888.849.0851 marzanoresearch.com



## Planning For Questioning

**Effective Questioning  
doesn't just happen off the  
cuff....**

888.849.0851 marzanoresearch.com



Good Questioning Gives Students...


- Something to think about
- A vantage point from which to think
- Ways to think
- Reasons to think


Kilgo and Raphael 2009

888.849.0851 marzanoresearch.com



What are your thoughts  
on Questioning?



888.849.0851 marzanoresearch.com 

**What do you think?**  
Higher-order questions are  
best for improving student  
achievement.



888.849.0851 marzanoresearch.com 

**What do you think?**  
Lower-order questions are  
best for improving student  
achievement.



888.849.0851 marzanoresearch.com 

**...BOTH are false!**  
**Alone, neither has proven  
to be more effective than  
the other.**

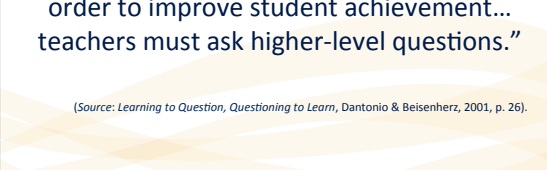



888.849.0851 marzanoresearch.com 

**Higher Order Question Bias**

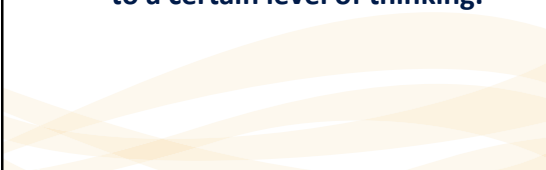
“Many educators and researchers, even today, cling to the presumption that in order to improve student achievement... teachers must ask higher-level questions.”


(Source: *Learning to Question, Questioning to Learn*, Dantonio & Beisenherz, 2001, p. 26).



888.849.0851 marzanoresearch.com 

**Asking a question  
doesn't automatically lead  
to a certain level of thinking.**



888.849.0851 marzanoresearch.com 

### Where We Are Today:

Focus on ***sequences of questions*** designed to help students develop connected understandings and teachers assess students at different levels of understanding.

888.849.0851 marzanoresearch.com



### A Practical Pedagogy of Questioning

- An approach that attempts to elicit deeper and more rigorous thinking in students by asking various types of questions in a ***specific linear sequence***.

888.849.0851 marzanoresearch.com



The key is to scaffold knowledge through your questions.

888.849.0851 marzanoresearch.com



- Using **well planned questions at various levels of thinking** is more effective than multiple questions that have no clear scaffold of learning.

888.849.0851 marzanoresearch.com



### Implication:

Teachers should purposefully plan and ask questions that require students to engage in various level of thinking.

888.849.0851 marzanoresearch.com



### Implication:

A carefully prepared sequence of questions is preferable to large numbers of questions.

888.849.0851 marzanoresearch.com





## Ask and Re-ask

- The questions you want students to be able to answer.
- Prepare the sequence and use it over and over and over.....

888.849.0851 marzanoresearch.com

MARZANO Research Laboratory

## Scaffold Questions to Scaffold Knowledge

- Scaffolds are built from the ground up.
- Knowledge is built the same way.
- Scaffolding will provide more accurate feedback on learning progressions.

888.849.0851 marzanoresearch.com

MARZANO Research Laboratory

## Four Phases for Questions...

**Phase 1 = Retrieval**

**Phase 2 = Comprehension**

**Phase 3 = Analysis**

**Phase 4 = Knowledge Utilization**

Marzano Taxonomy 2009

888.849.0851 marzanoresearch.com

MARZANO Research Laboratory

## Phase 1 Questions

- Are the building blocks for complex ideas you want students to know.
- Use these questions to help students elaborate on their basic knowledge about a topic.
- Can serve as an oral pre-assessment

888.849.0851 marzanoresearch.com

MARZANO Research Laboratory

## Phase 2 questions

- Ask students expand on their understanding of level 1 questions
- How are they comprehending the knowledge that you are teaching them.

888.849.0851 marzanoresearch.com

MARZANO Research Laboratory

## Scaffolding questions...

- **Phase One:**
- Who
- Where
- What
- When
- List
- **Phase Two:**
- Discuss
- Describe
- Compare
- Explain
- Show

888.849.0851 marzanoresearch.com



## Phase 3 questions

- Challenge students to **elaborate** on what they know by forming opinions and making claims based on their continued learning.

888.849.0851 marzanoresearch.com



## Level 4 questions

- Challenge students to use their understanding to engage in higher order questions.
- These may be oral or written.

888.849.0851 marzanoresearch.com



## Scaffolding questions...

- **Phase Three:**
- Analyze
- Contrast
- Solve
- Distinguish between
- Illustrate
- Demonstrate
- **Phase Four:**
- Evaluate
- Appraise
- Judge
- Rate
- Defend

888.849.0851 marzanoresearch.com



A sequence of well planned questions is one of the most effective assessment tools you possess.

888.849.0851 marzanoresearch.com



I hope your lunch was fantastic!!

888.849.0851 marzanoresearch.com



## Questioning Sequences

- Can be used within a single lesson
- Can be used throughout an entire unit
- Can be recycled and reviewed to solidify knowledge almost daily
- There is an infinite number of sequences that can be developed for a single goal.
- Sequences don't require numerous questions.

888.849.0851 marzanoresearch.com



Build a question sequence together  
using a standard.

We Will Build The First Two Phases

888.849.0851 marzanoresearch.com



## Using This Standard

- **Explain the roles of political and military leaders during the Revolutionary War.**

888.849.0851 marzanoresearch.com



## Social Studies Standard

- **Explain the roles of political and military leaders during the Revolutionary War.**
- Phase 1 questions help students elaborate on their basic knowledge about a topic.
- Phase 2 questions: Ask students expand on their understanding of level 1 questions
- Develop three question for each phase.

888.849.0851 marzanoresearch.com



## Social Studies Standard

- **Explain the roles of political and military leaders during the Revolutionary War.**
- What would be some possible phase 2 questions for this standard?

888.849.0851 marzanoresearch.com



## What about guiding questions?

- Write a Guiding or Big Questions for a unit you will be teaching.
- Next, scaffold questions below it to link students thinking to this level.
- Use the question taxonomy to help you do this.

888.849.0851 marzanoresearch.com





