

Transforming Elementary Classrooms Extending the TLI 2012 4th/5th Grade

January 22, 2013 Webinar

Office of Early Learning

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Webinar Attendance

<http://tinyurl.com/wvde-1-22>



Go to Training

- Microphones are muted
- Questions—Chat
- Evaluation



Extending the TLI 2012 Session Goals

- Multiplicative Structures
- Questioning in Writing



Fluency in Mathematics

Let's repeat that again for emphasis: *It is now clear that both fact-based and conceptual methods are important in elementary education.*

You must know your math facts to be able to do advanced math well. At the same time, knowing only facts and not the conceptual relationships connecting them leads to a shallow and inflexible approach to the subject.

The Brilliant Blog

Response to findings published January 4, 2013

The Journal of Neuroscience



MULTIPLICATIVE STRUCTURES

Multiplicative Structures

- Write a short multiplication “word” problem.
- Write a short division “word” problem.



Multiplication Poll

Where is the unknown?



Division Poll

Where is the unknown?



Types of Multiplication Problems

- Equal Groups
- Arrays, Area
- Compare



Equal Groups

Unknown Product	Group Size Unknown	Member of groups Unknown
There are 3 bags with 6 plums in each bag. How many plums are there in all?	If 18 plums are shared equally into 3 bags, how many plums will be in each bag?	If 18 plums are to be packed 7 to a bag, then how many bags are needed?



Arrays, Area

Unknown Product	Group Size Unknown	Member of groups Unknown
<p>There are 3 rows of apples with 6 apples in each row. How many apples are there?</p>	<p>If 18 apples are arranged into 3 equal rows, how many apples will be in each row?</p>	<p>If 18 apples are arranged into equal rows of 6 apples, how many rows will there be?</p>
<p>What is the area of a 3 cm by 6 cm rectangle?</p>	<p>A rectangle has an area of 18 square centimeters, If one side is 3 cm long, how long is a side next to it?</p>	<p>A rectangle has an area of 18 square centimeters, If one side is 6 cm long, how long is a side next to it?</p>

Compare

Unknown Product	Group Size Unknown	Member of groups Unknown
<p>A blue hat costs \$6. A red hat cost 3 times as much as the blue hat. How much does the red hat cost?</p>	<p>A red hat costs \$18 and that is 3 times as much as a blue hat costs. How much does a blue hat cost?</p>	<p>A red hat costs \$18 and a blue hat costs \$6. How many times as much does the red hat cost as the blue hat?</p>

Solving Multiplication & Division “Word” Problems

- Connect multiplication to division soon after multiplication is introduced
- Modeling problems with pictures, diagrams or concrete materials
- Use interesting contextual problems
- Focus on what the number represent

Caution: Avoid Relying on the Key Word Strategy

- Encourages students to ignore the meaning and structure of the problem
- Key words may be misleading
- Problems may not have key words
- Key words don't work with two-step problems

*Elementary and Middle School
Mathematics Teaching Developmentally*





The Power of Questioning in Writing

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Writing is not easy. Because it is not passive but *active*, not receptive but *generative*, it often involves hard mental work. This is precisely what makes it a powerful tool to put into the hands of students—ALL students.

Ruby Payne reminds us that for disadvantaged students their **lack of flexibility of language is what most often prevents them from real achievement in school.**



A hand is shown placing a white letter block with the letter 'y' on a grey grid. Other white letter blocks with various letters are scattered across the grid. The text 'Academic Vocabulary' is overlaid in blue.

Academic Vocabulary

y

Another Ingredient for Academic Success

Speaking and Listening

Kindergarten	First Grade:	Second Grade:	Third Grade:	Fourth Grade:	Fifth Grade:
Students will speak audibly and express thoughts, feelings, and ideas clearly.	Students will produce complete sentences when appropriate to task and situation.	Students will produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification.	Students will speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.	Students will differentiate between contexts that call for formal English and situations where informal discourse is appropriate; use formal English when appropriate.	Students will adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation.

Implications of the Common Core

Shifts:

Descriptions:

An Emphasis on Integrated Literacy

Reading, writing, speaking and listening cannot be separated and still be effectively taught. Writing is taught in the context of reading and discussing complex texts. This integration cannot be lip service. It must be actual, it must be significant, and it must be sustained.

An Emphasis on Building Strong and Deep Content Knowledge

Literacy is not fragmented; rather, it is the result of consistent, purposeful attention on the part of teachers and curriculum to building a strong and deep “base of knowledge over a wide range of subject matter.” This is the opposite of the “today we’re reading about dinosaurs, tomorrow about tomatoes” approach to the text. Instead it recognizes that students will learn to read well and deeply only if they are given the opportunity to build strong and deep domains of knowledge and understanding that matter.

An Emphasis on Expository, Text-Based Writing

Narrative writing is included in some form at all grade levels. However, the majority of the writing standards are expository: opinion (K-5) and informative/explanatory. This writing is consistently evidence-based, with evidence coming from working with rich text and other rich materials in various ways, and thinking about it honestly and critically. It is also writing that demonstrates deep understanding of and clear thinking about its

90/90/90 Schools

- Doug Reeves (2000)
- 90% Free and Reduced Lunch, 90% minorities, 90% high achievement
- Key common factor—frequent use of nonfiction in ELA (reading, writing, speaking/listening, and language)

- Write and **think**
- Raises cognitive rigor
- Provides rich, complex, and authentic diagnostic information—not “canned” data

NAEP, ETS, and National Writing Project Study

- Activities and experiences that give students **knowledge** (topic, not theme) and help them construct meaning from that knowledge—(Context for vocabulary instruction and acquisition!)

Through REPEATED Modeling:

- Thinking—facilitated, not controlled, by the teacher
 - Reflect on knowledge, analyze information, synthesize—QUESTIONING Strategies, Speaking and Listening, authentic context for vocabulary acquisition
 - Transform the information from reading material to writing—POWER!
- Framework for Organizing and Developing Ideas
- Frequent opportunity to write—not “canned” writing because writing is “generative”—which requires time

What produces strong thinkers

Implications of Time Required for Gains in ELA

Teachers' "plates" are typically too full—preventing them from being able to spend the time required for authentic mastery of our Standards.

Discussion at the
Local/District Level:

- What is the evidence that it is effective?
- Can it truly be tied to local, classroom achievement?
- If it is removed, how do we create the appropriate environment and practices for deep learning?



WVDE Requirements:

- WESTEST 2 (will become SMARTER Balanced Assessment)
- WV Writing Assessment (we be part of SMARTER Balanced Assessment)
- Tech Steps or equivalent (NCLB)

Everything else is a tool that is chosen and selected at the local/district level.

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