

Planning for Instruction: The What, the Why, the When and the How

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NC DPI Leadership Institute

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Elizabeth Murray

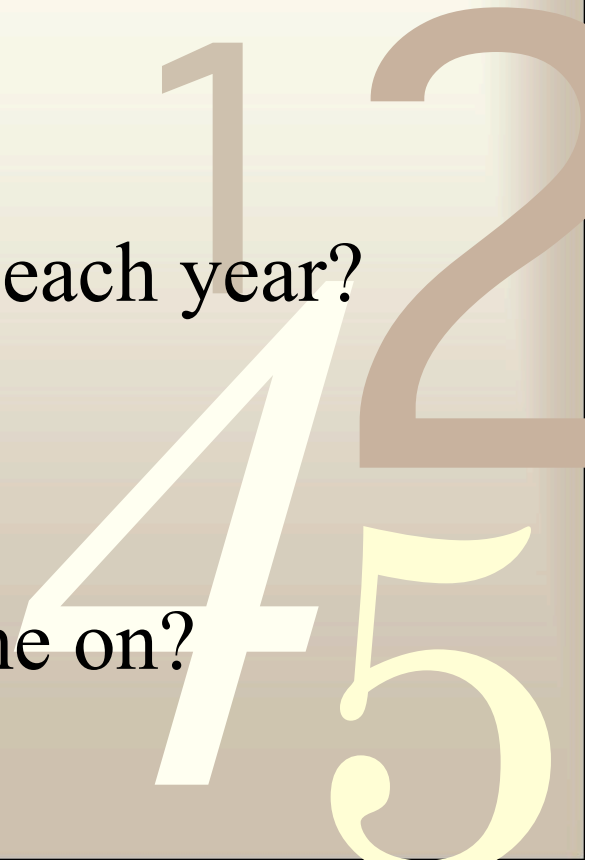
Pat Sickles



Getting Started

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- ❖ What is the first thing you teach each year?
- ❖ What is the last thing you teach each year?
- ❖ What do you spend the most time on?



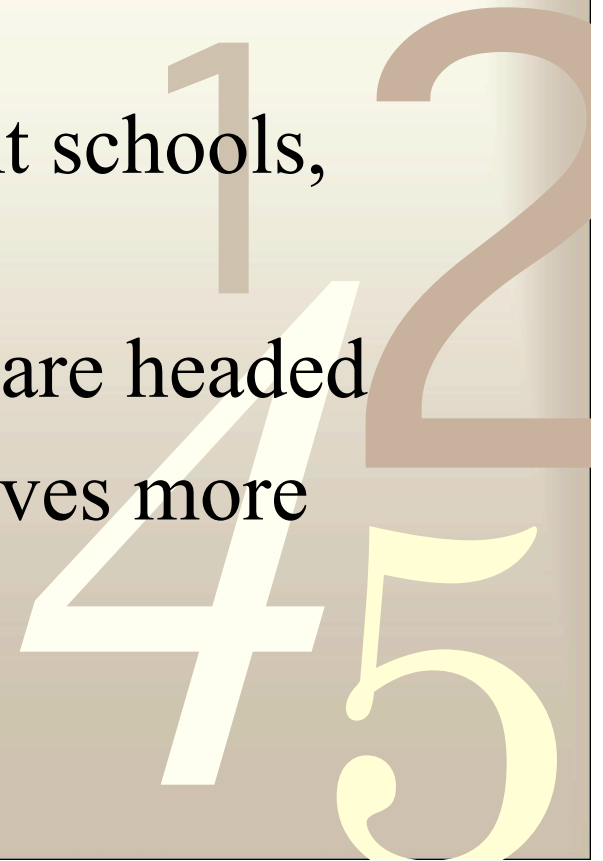
The What

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- ❖ A framework for instruction
- ❖ A coherent implementation of the goals and objectives in the North Carolina Standard Course of Study for Mathematics
- ❖ A carefully planned document that helps give the important mathematical concepts the time needed for student understanding

The Why

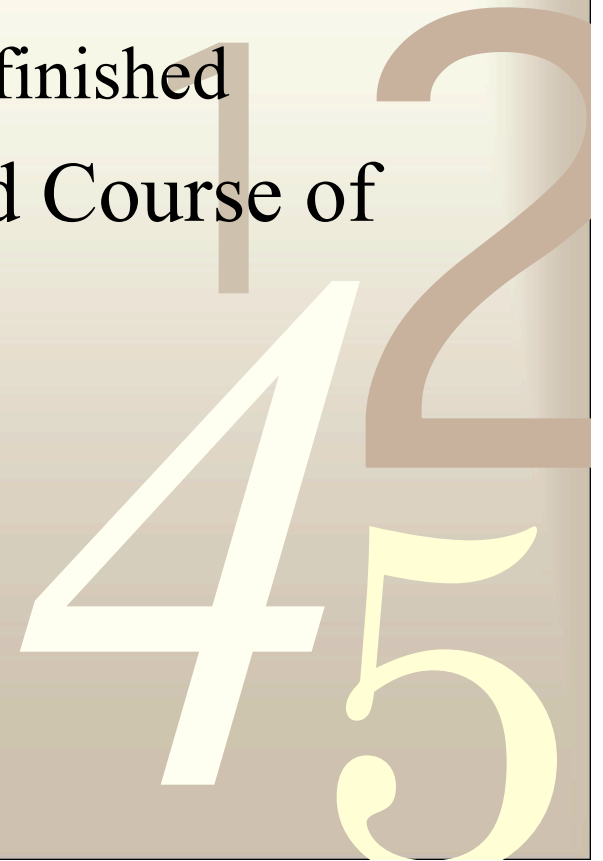
- 0011 ❖ Teachers can plan together—collaborate
- ❖ Important for new teachers
- ❖ For teacher ownership
- ❖ When students move to different schools, fewer instructional gaps
- ❖ A better roadmap for where we are headed
- ❖ Time spent on goals and objectives more equitable
 - ❖ Analyze assessment data



The When

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- ❖ If there is no plan
- ❖ Before the school year begins
 - ❖ Start before the preceding year is finished
- ❖ When there is a revised Standard Course of Study
- ❖ When there is a need for change
- ❖ Revisit often; revise if needed



The How

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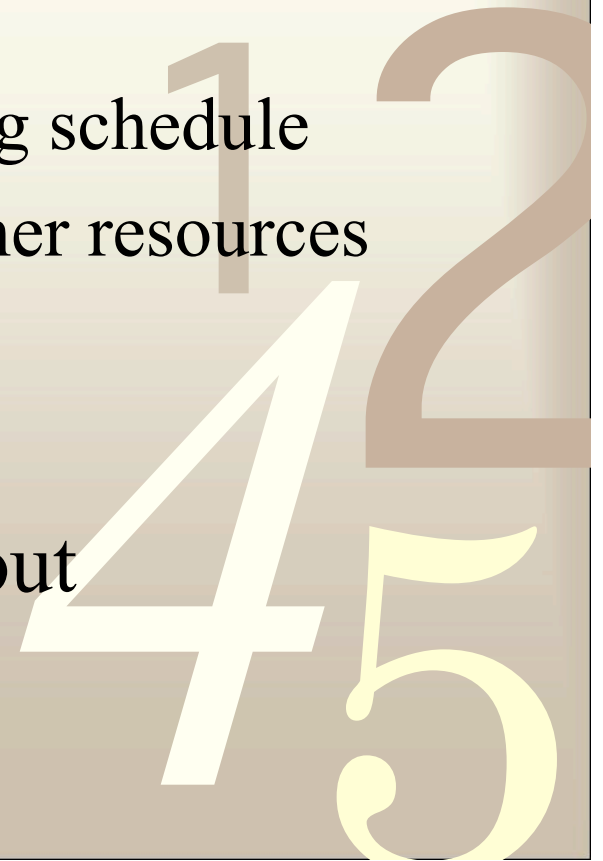
- ❖ Teachers/leaders work together
- ❖ Identify the “Big Ideas” in the curriculum
- ❖ Make connections across strands
- ❖ Employ vertical articulation
- ❖ Use appropriate resources



Where Do We Begin?

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- ❖ Assemble materials and resources
 - ❖ Standard Course of Study
 - ❖ School Calendar, including testing schedule
 - ❖ Textbooks, DPI resources and other resources
 - ❖ Chart paper, markers, post-its
 - ❖ Computer
- ❖ Comfortable environment without distractions



Planning the Mathematics

- 0011 ❖ Determine the mathematics to be taught
 - ❖ Look at SCOS for all three grade levels
 - ❖ Take time to look at the 2008 K-5 SCOS
 - ❖ New this year
 - ❖ Added Problem-Solving Strand
 - ❖ NC Standards based on NCTM's PSSM
 - ❖ Content Standards
 - ❖ Process Standards
 - ❖ Representation
 - ❖ Communication
 - ❖ Connections
 - ❖ Reasoning and Proof
 - ❖ Problem Solving



What are the big ideas in each strand in grades 6-8?

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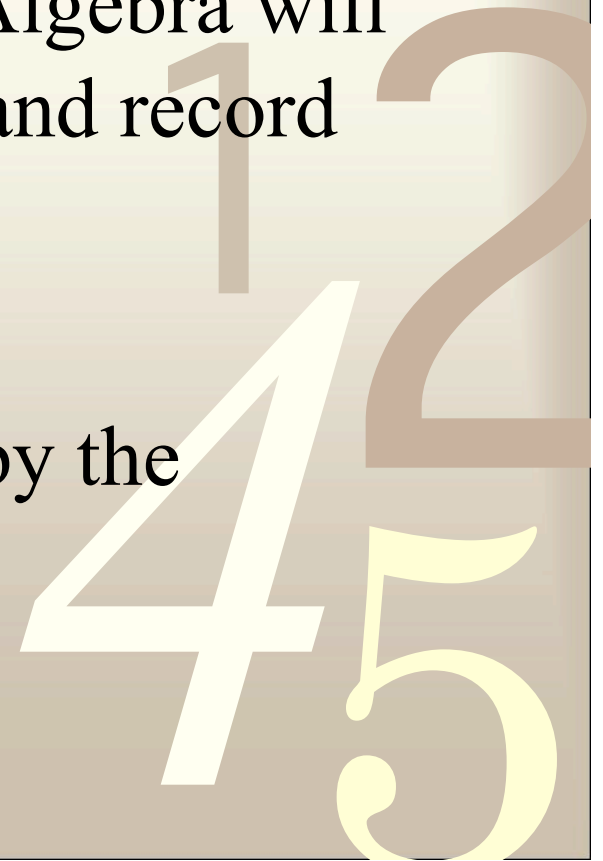
Big Ideas

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- ❖ Work with a group to determine which Big Idea each of the objectives for Algebra will fall under for each grade level, and record that on your handout:

“Big Ideas for Algebra”

- ❖ The Big Ideas were developed by the Partners Grant

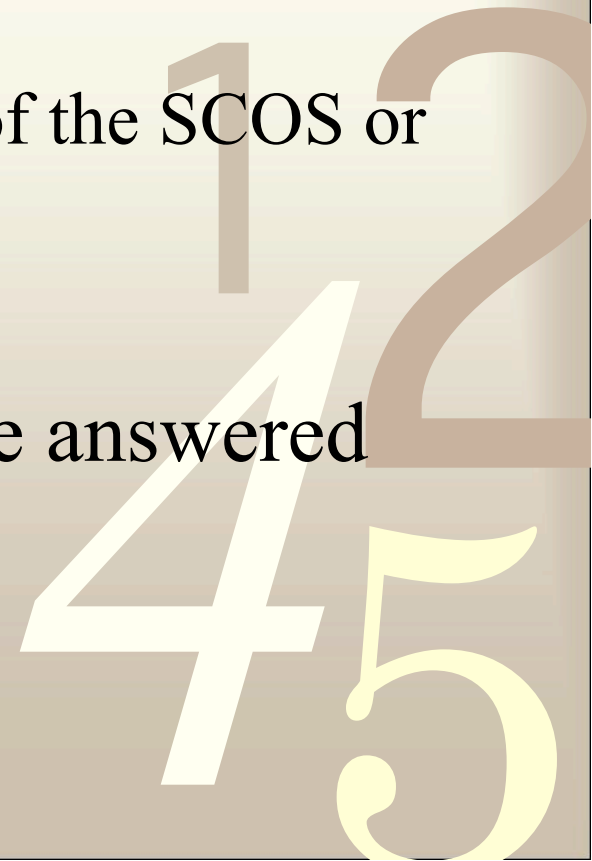


Planning the Mathematics...

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- ❖ Ordering topics to create coherence of mathematical ideas
 - ❖ This is not necessarily the order of the SCOS or the textbook
 - ❖ How do we decide the order?
- ❖ Writing essential questions to be answered as we teach



What Are Essential Questions?

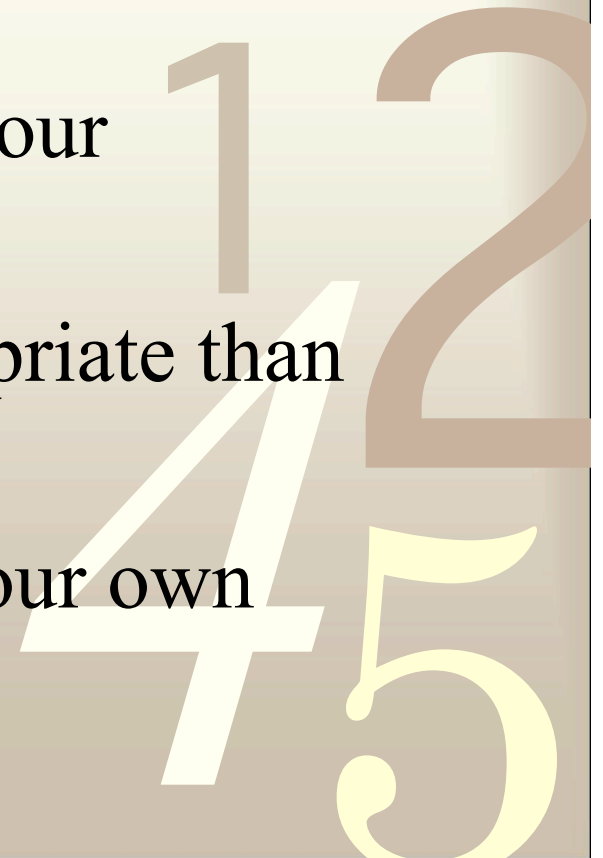
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- ❖ “Questions that are not answered with finality in a brief sentence.”
- ❖ “Their aim is to stimulate thought, to provoke inquiry, and to spark more questions.”
- ❖ “The best questions point to and highlight the big ideas.”
- ❖ “They also spark connections and promote transfer of ideas from one setting to others.”

Writing Essential Questions

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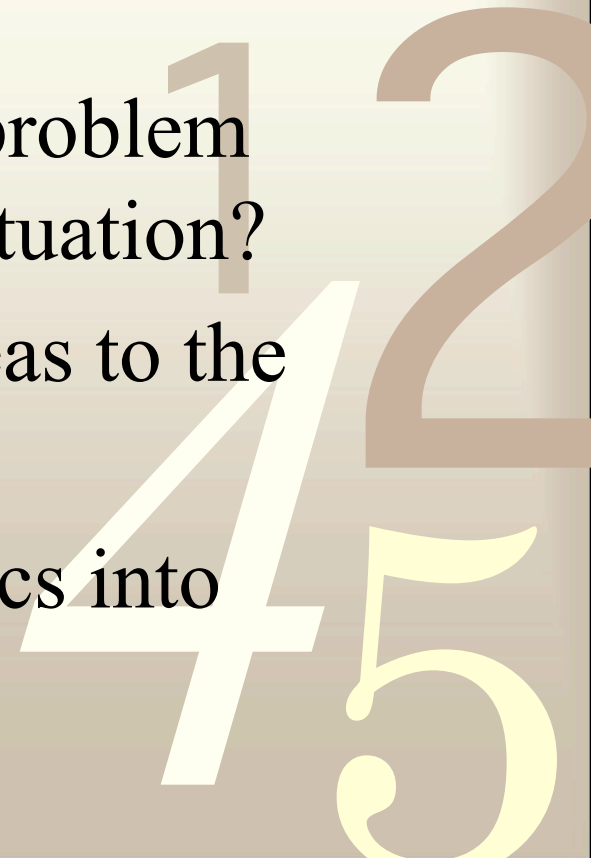
- ❖ In what ways is algebra real and what ways is it unreal?
- ❖ What is the role of functions in our everyday life?
- ❖ When is estimation more appropriate than finding an exact answer?
- ❖ Now try your hand at writing your own essential question.



More Examples of Essential Questions

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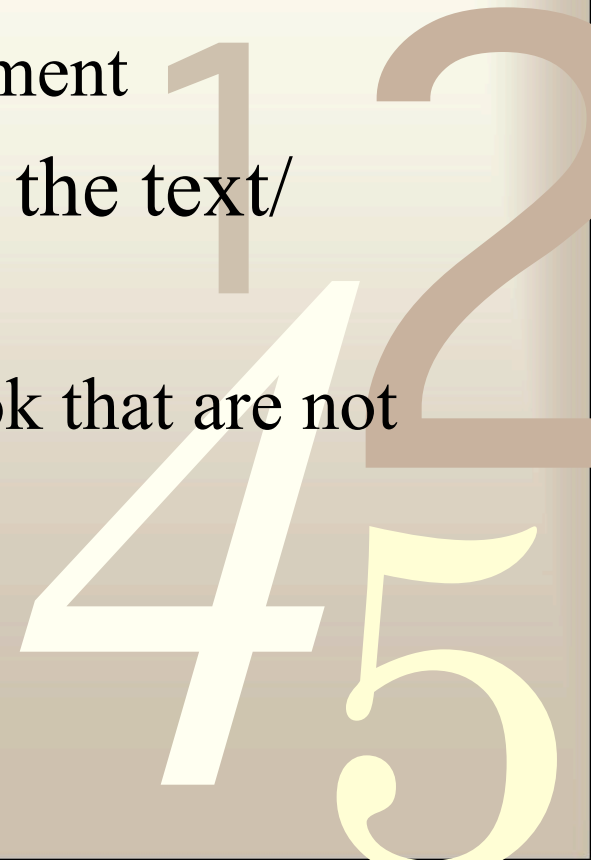
- ❖ What are the benefits and limitations of various data representations?
- ❖ What are the most appropriate problem solving strategies for a given situation?
- ❖ How do you translate verbal ideas to the language of mathematics?
- ❖ How do we translate mathematics into English?



Correlating Resources

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- ❖ Examine the correlation between the SCOS and your textbook/resources
 - ❖ Handout: SCOS/Textbook Alignment
- ❖ Identify concepts not covered in the text/resources
 - ❖ There will be topics in the textbook that are not in the SCOS



Correlating Resources...cont'd

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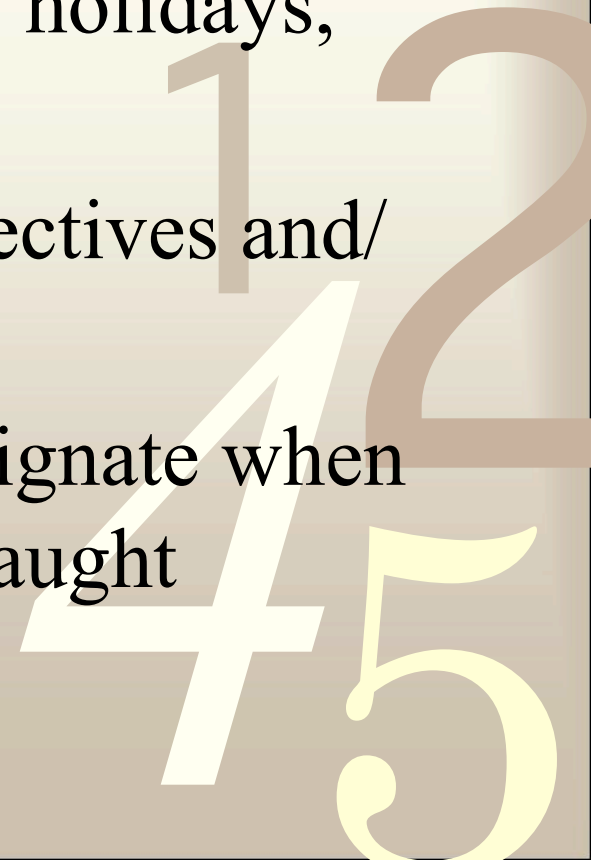
- ❖ Search for resources for concepts not covered
 - ❖ Where do we look?
 - ❖ How do we select?
 - ❖ Criteria
- ❖ Create a correlation document
 - ❖ What does it look like?
 - ❖ Unit, Objective(s) covered, suggested time, resources



Putting It All Together

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- ❖ On chart paper, pencil in beginning and ending dates of grading periods, holidays, testing days, etc.
- ❖ On post-its write individual objectives and/or essential questions
- ❖ Place post-its on the chart to designate when mathematical concepts will be taught



Number Talk

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- $995 + 118$
- $4/5 - 60\%$
- 1.25×4



Putting It All Together...cont'd

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- ❖ Using the correlation document
 - ❖ Write in tasks, resources, page numbers, web addresses, etc., assessments (formative and summative) next to appropriate objectives
- ❖ Check to make sure all objectives are included



Review and Reflection

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- ❖ Finalize the draft on the chart, discuss and leave for a few days
- ❖ Create an electronic copy
- ❖ Allow for peer editing
- ❖ Share and allow for others to contribute



Review and Reflection...cont'd

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- ❖ Keep notes as you use the guide during the school year
 - ❖ Note time, additional resources, etc.
- ❖ At the end of the school year, review and revise
- ❖ This is a living document!



Points to Consider

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- ❖ The Standard Course of Study, not the textbook, is our guide for what we teach
- ❖ Making sure all teachers are aware of the mathematics content is essential to what students learn
- ❖ Be aware of the amount of review done at the beginning of the year—engage students in grade level mathematics from day one