

# Standards Based Mathematics Instruction for Tier 1



# Trading Horses

A man bought a horse for \$50.

He sold it for \$60.

Then he bought the horse for \$70.

He sold it again for \$80.

**What is the financial outcome of these transactions?** (Ignore cost of feed for horse, cost of boarding etc.)

- **Independently solve the problem located on your table.**
- **Be ready to justify your solution.**

# Instructional Strategies

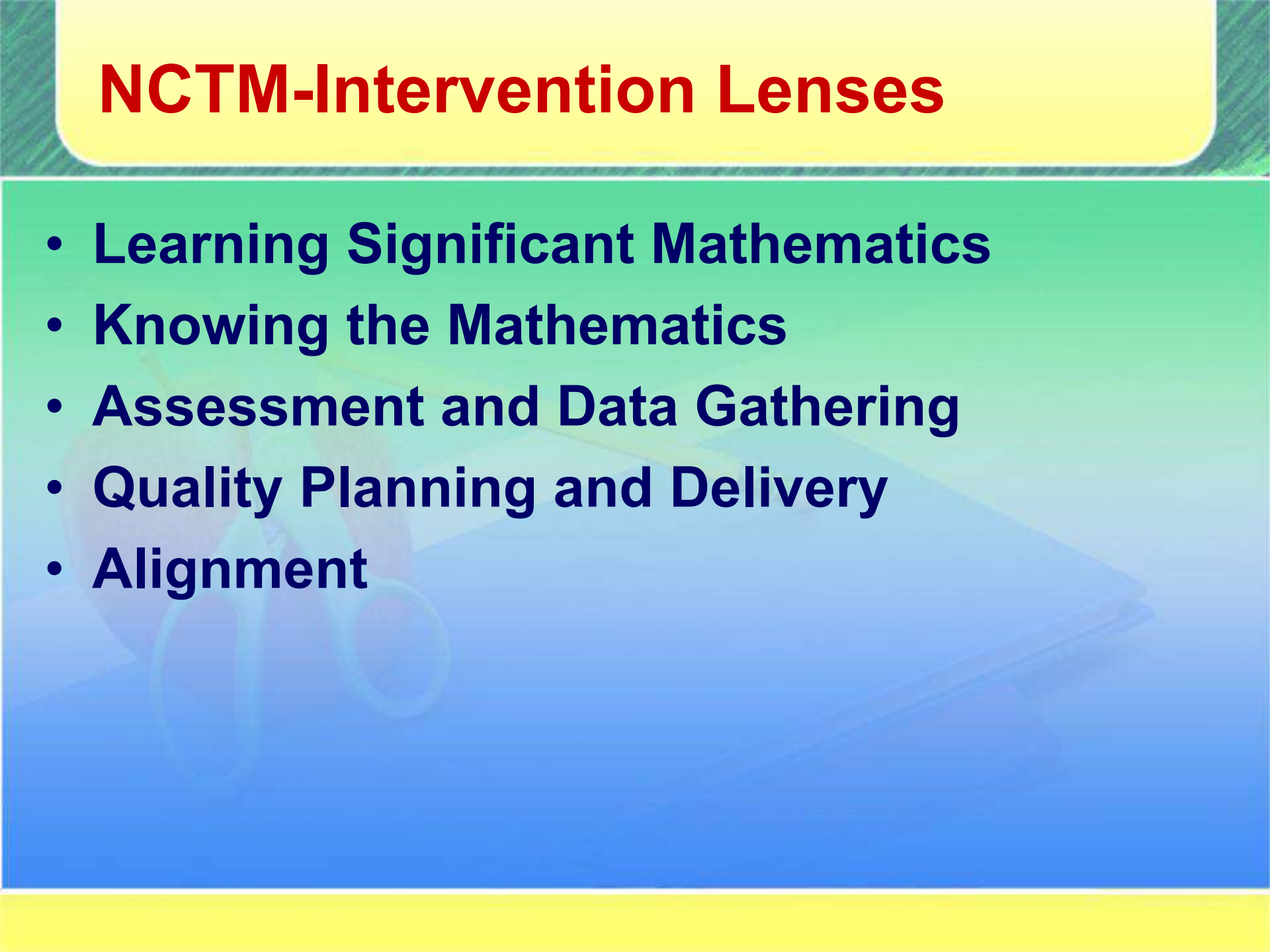
- Task to engage students with mathematics at the beginning of class
- Problem was given a title.
- Quiet independent work time was provided.
- Mathematical thinking was shared with a partner or small group.
- Group mathematical thinking shared with the entire group.

# Goals for Session

- Actively engage in mathematics
- Build an understanding of Tier 1 instruction
- Use research-based instructional strategies
- Identify components of quality mathematics lessons

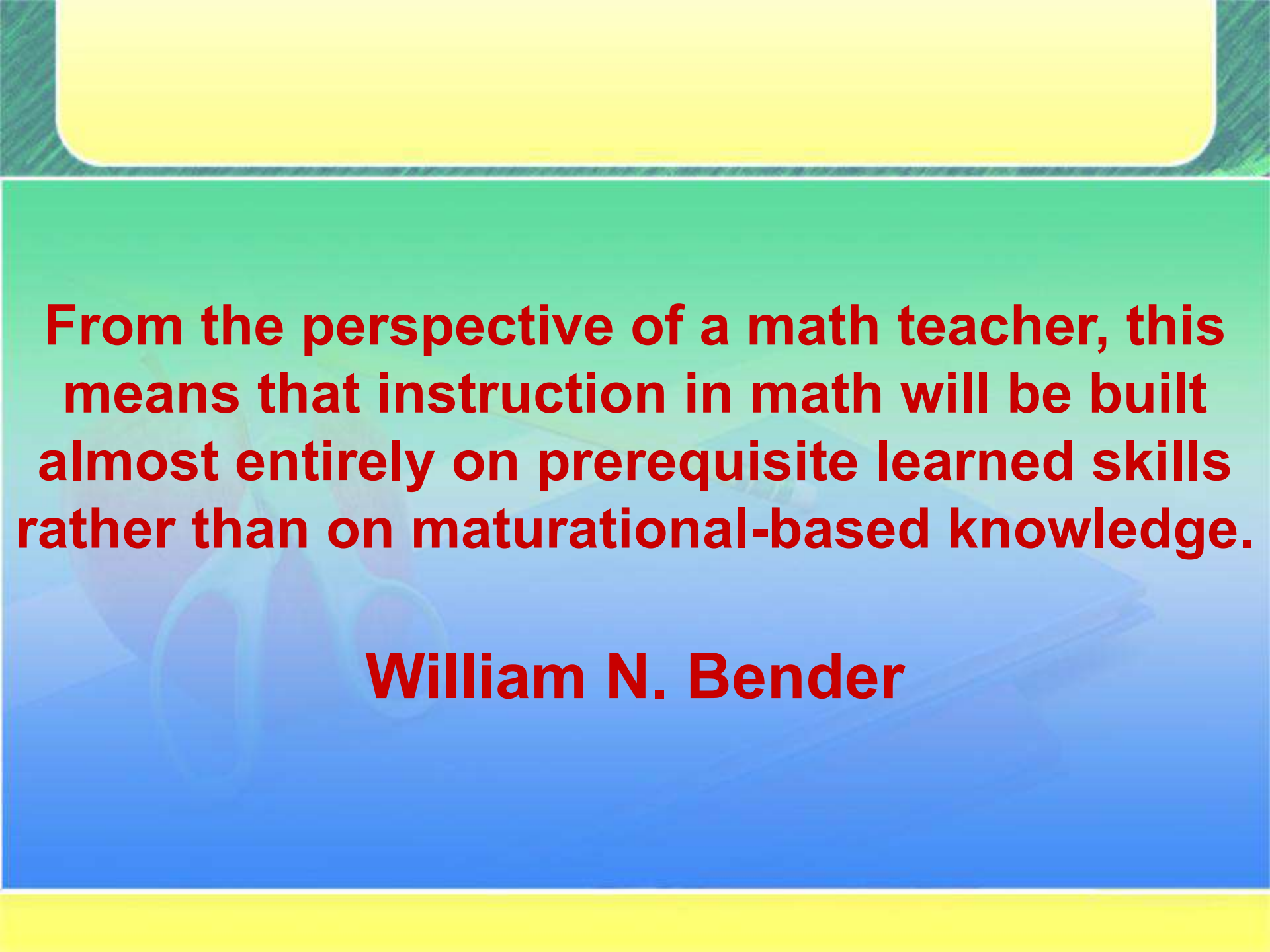


# **NCTM-Intervention Lenses**

- **Learning Significant Mathematics**
  - **Knowing the Mathematics**
  - **Assessment and Data Gathering**
  - **Quality Planning and Delivery**
  - **Alignment**
- 
- A background image showing a stack of papers and a pair of scissors, suggesting a focus on editing, planning, or reviewing documents.

**One, Two, Three, Many . . .**





**From the perspective of a math teacher, this means that instruction in math will be built almost entirely on prerequisite learned skills rather than on maturational-based knowledge.**

**William N. Bender**



# Students

What are the characteristics of a student who is successful in your mathematics classroom?

What are the characteristics of a student who has difficulty in your mathematics classroom?





# Quality Lesson Design

- **WV CSOs/ Assessment**
- **Launch**
- **Explore**
- **Summarize**



- Research-based Strategies
- Vocabulary Instruction
- Formative Assessment
- Differentiation Strategies

# Crossing the River



# Tier 1 Universal Instruction Quality Lesson Design

- **WV CSOs/ Assessment**

M.O.4.2.1

determine the rule and explain how change in one variable relates to the change in the second variable, given an input/output model using two operations.



# Tier 1 Universal Instruction Quality Lesson Design

- WV CSOs/ Assessment
- Launch





# Crossing the River



# Crossing the River

Eight adults and two children need to cross a river, and they have one small boat available to help them. The boat can hold either one adult, or one or two children. Everyone in the group is able to row the boat. How many one-way trips does it take for the eight adults and two children to cross the river?

**Use the chart paper to record your thinking.**

# Crossing the River

<b>What do you KNOW for sure?</b>	<b>What do you WANT to do, figure out, find out?</b>	<b>Are there any special CONDITIONS?</b>

Show how you solved the problem using pictures, numbers and words.

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# Next Steps. . . . .

- How will you use the elements of quality lesson design as you plan your lessons next year.
  - **WV CSOs/ Assessment**
  - **Launch**
  - **Explore**
  - **Summarize**

# Teach 21

The screenshot shows a Windows Internet Explorer browser window displaying the Teach 21 website. The browser's address bar shows the URL <http://wvde.state.wv.us/teach21/>. The website header features the West Virginia Department of Education logo and a search bar for K-12 sites. A navigation menu on the left lists: CURRICULUM, ASSESSMENT, RESPONSE TO INTERVENTION, PROFESSIONAL DEVELOPMENT, PRESENTATIONS, and CONTACT US. The main content area includes a large graphic with a triangle containing the text "21<sup>ST</sup> CENTURY Student Performance" and "21<sup>ST</sup> CENTURY Content". Below this graphic is the heading "Welcome to the Teach 21 Web Site!" and a paragraph stating: "This site was designed by teachers to assist colleagues in planning and delivering effective 21st century instruction in West Virginia Classrooms. It enables educators to quickly access 21st Century Content Standards." A small box in the bottom left corner of the page is titled "ASSESSMENT UPDATES" and lists "January 2009" and "November 2008".

<http://wvde.state.wv.us/teach21>

# Contact Information

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# Questions?

