KENAN FELLOWS PROGRAM
FOR CURRICULUM AND LEADERSHIP DEVELOPMENT

Making Math Count

A project from the Kenan Fellows Program in conjunction with the Department of Public Instruction

Public Schools of North Carolina
State Board of Education
Department of Public Instruction

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Making Math Count: A three-part professional development series focusing on assessment and instruction in grades K-2

Part 3:

Prescription: Pushing the "Edge of Understanding"

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Wow! THE HOW!

- Often with formative assessment, we find out what the problem is, but don't get the "how" of fixing it.

- In Chapter 2 Day 2, you watched three students, all at different stages of understanding in composing and decomposing to ten. We will share some easy to implement, engaging lessons that target the students stages.

The Hiding Assessment identifies a student's edge of understanding within numbers.

Think:

What number(s) did the students automatically know the combinations for?

At what point did the student reach their frustrational level?

Kindergarten Student

This child understands the parts of 3 and 4 automatically. She is practicing the parts of 5 and her frustrational level is with parts of 6.

Click to View Video:
https://docs.google.com/file/d/0B6spTSktQyQaNzBYVTBEMTd4Tg/edit?usp=drive_web

First Grade Student

This child understands the parts of 3 and 4 automatically. He is practicing the parts of 5 and his frustrational level is with parts of 6.

Click to view video:

https://docs.google.com/file/d/0B6spTSktQyQaTkliVERacG1lX0k/edit

Student Assessment- Second Grade

This child understands the parts of 3, 4, and 5 automatically. She is practicing the parts of 6 and her frustrational level is with parts of 7.

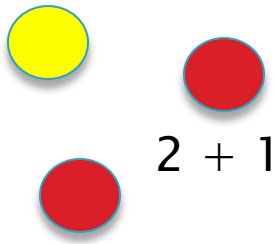
Click to View Video:
https://docs.google.com/file/d/0B6spTSktQyQaMVp0RFB5eF9DRkU/edit?usp=drive_web

How Can We Address All These Different Numbers?

- These students can benefit from quality math lessons that in design are differentiated activities

- We will highlight:
  - Red and Yellow Drop
  - Number Designs
  - Addition with Colored Cubes

Red and Yellow Drop



2 + 1 = 3

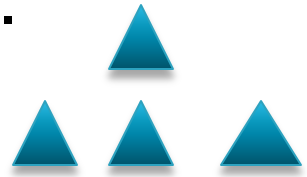
- Student knows the range of numbers they should be working on, example 3, 4 and 5.
- Student starts with 3 red/yellow counters, holds them in hand and drops on work surface.
- Student counts how many red and how many yellow are face up.
- Record corresponding equations.

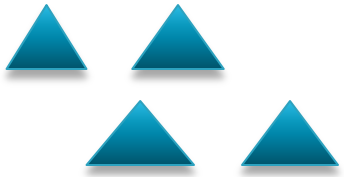
  Red + Yellow = Total

Number Designs

Number Designs

- Students use various objects and arrange them in different designs that show combinations of their target numbers.



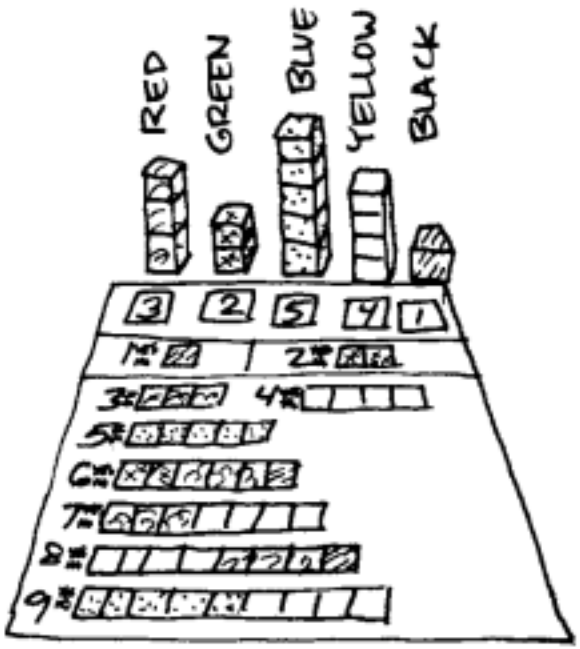


- Students may record the equations that accompany their designs. ($1 + 3 = 4$ and $2 + 2 = 4$)

- http://www.center.edu/NewsletterText/documents/Chapter10.pdf (Overview of number activities begins on page 15, Number Design activities begin on page 18)

Addition with Colored Cubes

- The teacher establishes a set of colored cube stacks for the day (see picture) .
- The students record how many different combinations of numbers 3-10 they can create without breaking apart the stacks the teacher made.



http://www.center.edu/NewsletterText/documents/Chapter10.pdf (page 12)

- We know it is important for the students to match their understanding level with appropriate instructional strategies, so how do we advocate for this type of learning?

- Because it aligns to the…
  - Common Core Standards
  - Mathematical Practices
  - IT WORKS!

The Results

- According to results from one pilot school, 3rd graders who experienced this type of instructional methods showed double the growth on the state assessments compared to those who did not have these experiences.

Our Experiences

Alexandra: The data I have collected on my 2nd graders using the Hiding Assessment influences my instruction every day. Students are strengthening their number sense through tasks targeting their specific levels of understanding.

Christina: Often the only strategies used to offer students additional support in mathematics are flash cards and timed tests. With access to the assessment and strategies highlighted in this presentation, teachers instead have research based, hands-on, and engaging ideas to use when working through the Response to Intervention (RtI) process.

Katie: The Common Core and the Mathematical Practices expect both students and teachers to have a deeper understanding of mathematics and an increased level of rigor. These types of formative assessments and instructional strategies offer the support and structures classrooms need to achieve the goals of conceptual understanding

Further Information

- For more information about the AMC assessment and instructional system or the North Carolina pilots, please contact:

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