

RAMP-A

JUNE 25, 2013

SUMMER INSTITUTE

Goals of the Summer Institute

Overarching theme: *How we learn something affects how we know it.* Goals:

- * Practice and reflect on productive professional norms
- * Compare our beliefs and values to our practices
- * Examine coherence of CCSS
- * Engage in mathematics tasks and discuss SMP
- * Explore student thinking through their work on a quiz
- * Consider ways to support students' development as learners
- * Plan a lesson involving the use of a rich task in our PLC

Goals for today

- * Think about our practices in light of research on effective teaching.
- * Examine and understand coherence of the CCSS.
- * Engage in a math task to examine the standards for mathematical practices.
- * Think about how to affect students' roles in their learning.
- * Explore student thinking through their work on a quiz

Examining our beliefs, values, and practices

- * Purpose: Exploration
 - * What beliefs and values do we hold about math teaching and learning?
 - * How are they related to our practice?
 - * Why do we teach the way we do?
 - * Are there differences between our values and the way we teach?
- * Middle school teachers – please sit with other middle school teachers
- * High school teachers – please sit in your school teams

Beliefs Card Sort (15 minutes)

- * Tape statements onto **sticky notes**
 - * Put your **4-digit number** on the sticky note.
- * **Sort** your cards into three piles:
 - * Agree
 - * Disagree
 - * Cannot decide
- * Feel free to **modify** the statements as needed – add conditions, amplifications, exceptions
- * Create a **team poster** of your card sort

Belief Card Sort Impressions (10 minutes)

- * Discuss:

- * How easy or difficult was your sorting?
- * What modifications were needed?
- * Did everyone on your team agree?
- * What issues came up?

Purposes & Activities (10 minutes)

- * Compare your ideal values with your actual practice
- * What patterns do you notice?
- * Are they the same for everyone on your team?

Influences on Our Practice

| Individual Knowledge | RAMP-A Team Experience | School Department Practices |
|---|------------------------|-----------------------------|
| Math Subject Matter | | |
| Student Learning and Challenges in Math | | |
| Math Curriculum | | |

Doing Math with Peers: Intimidation

- * Common experience
- * Related to beliefs:
 - * What it **means** to “know math”
 - * **Who** knows math and **how**?
 - * Elementary
 - * Middle School
 - * High School
 - * Beyond
- * Our stories: Janet, Matt

Effective Teaching

* (Cheryl)

Break!

(Snacks 😊)

- * If you have read a book or an article that has really affected the way you think about teaching and/or learning, write its title and a sentence that will hook other teachers on a sticky note and post it on the Book Poster.

Coherence: Goal

- * Deepen our understanding of what is meant by ***coherence of*** the CCSS, looking particularly at the Functions conceptual category.

What do you already think?

- * Spend one minute thinking alone about the meaning of coherence in everyday language. How does that meaning relate to how you think about the coherence of the CCSS?
- *
- * Go around your group, with each person quickly sharing one idea they have about the meaning of coherence in the standards. Listen carefully to others and write new ideas with your own.

Define coherence as it relates to teaching Algebra 1

From dictionary.com:

- * 1. logically connected; consistent: a coherent argument.
- * 2. cohering; sticking together: a coherent mass of sticky candies.
- * 3. having a natural or due agreement of parts; harmonious: a coherent design.

Devise a working definition of coherence of Algebra 1 for your group.

Create questions for yourself

- * What do you still want to know about coherence of the CCSS? Take two minutes to quietly and individually brainstorm some questions on the back of your paper.**

Read the Introduction to Functions

Functions Conceptual Category:

- * Read the introduction and underline any words or phrases that could indicate coherence.
- * Discuss these in your group and try to come to a consensus on which ideas should be underlined.

Overview of the conceptual category

- * Examine the Functions standards and lightly cross out any standards that you do not think will be addressed in Algebra 1.
- * There are four domains: why do you think the authors chose to group standards in these four domains?

The authors' reasons

- * “The organization of the first two groups under mathematical practices rather than types of function is an important aspect of the Standards: students should develop ways of thinking that are general and allow them to approach any type of function, work with it, and understand how it behaves, rather than see each function as a completely different animal in the bestiary” (Functions Progressions, 2012, p. 7).

Finding Coherence in Functions

Work in your groups to look for and describe coherence in the pairs of standards, domains, and clusters.

Coherence in Practice

A friend from college, who teaches in another state, sent you this Growing Rectangles task and said a colleague of hers loved using it in her Algebra 1 classes. You decide to bring it to your PLC for discussion on possibly all using it. Which CCSS standards does it address and in what ways could it be used to help students develop a coherent understanding of functions?

What have you learned?

- * Look back at your questions: Are you able to answer them? Do you have new questions?

Reflection:

- * In what ways has your understand of coherence of the standards changed? What questions do you have?



Lunch! Roles of Teachers and Students in Learning

* (Kris and Brandon)

Height of a Baseball

* (Matt and Scott)

Quiz: Student Thinking

* (Kathy)