RAMP-A April 26, 2013

Welcome!!

Today's Goals

Share ideas to help students understand concepts.

- Examine student work and brainstorm activities to help students develop understanding.
- Notice differences between tasks based on their potential to elicit discourse.
- Look at student work on a common task and share ideas to support deeper understanding.
- Create a learning trajectory to examine coherence.
- Consider the effect of mindset on motivation.
- Look at Lessons Learned 2012 EOC to think about how we can improve.
- Watch and discuss a lesson with administrators.

How are we doing?
Goals of the Grant

Deep common understanding of the Algebra 1 content in the CCSS

Increase student motivation, engagement and interest in mathematics

Thoughtful planning, instruction and assessment cycles

Professional reflection, support and growth in partnership with colleagues and community

Groups for the morning sessions

Group A: Ferris, CV and Barker, Cheney

Group B: Mead, Republic, Shadle, West Valley & Barker, Libby & Glover

Group C: Mt. Spokane, U-Hi and Bowdish, NC, Rogers, Chase and Garry

Group D: G-Prep, Mountainside, LC, Salk and Shaw

Round 1

- Groups A and B: Room 30 Intersections, Part 2
- Group C: Room 24 Error Analysis
- Group D: Room 41 Comparing tasks for discourse

Round 2

- Groups A and B: Room 30 Intersections, Part 2
- Group D: Room 24 Error Analysis
- Group C: Room 41 Comparing tasks for discourse

Break: Snacks and Coffee in rm 147

Round 3

- Groups C and D: Room 30 Intersections, Part 2
- Group A: Room 24 Error Analysis
- Group B: Room 41 Comparing tasks for discourse

Round 4

- Groups C and D: Room 30 Intersections, Part 2
- Group B: Room 24 Error Analysis
- Group A: Room 41 Comparing tasks for discourse

Intersections, Part 2

Goals:

- Share ideas of strategies you used when teaching this lesson, why you tried them, and how they worked.
- Create a trajectory that describes how students developed the ideas related to this task.
- Examine student work for understanding.

Reflect on your strategies

- Record what you did, why you did it, and discuss how it worked.

Then label each strategy with an S or an N, depending on whether it

S: Supported students' achieving a deeper understanding of the mathematical concepts in the task.

N: was Not related to students' achieving a deeper understanding of the mathematical concepts in the task.

Summarize

- At the bottom of the page, write a short reflection on the overall lesson and how the modifications and strategies either enhanced (or didn't enhance) students' engagement in the task in such a way as to support deeper understandings. Things to consider: was cognitive complexity maintained?

Share ideas

Share ideas with each other and describe whether the plans worked the way you intended or not.

Report to your group the ideas you learned from others.

Create a learning trajectory

- Yellow stickies: procedures, facts
- Blue stickies: concepts
- Include knowledge students bring from previous years that is used in this task.
- Blue stickies near the time that you gave this task should indicate what ideas you wanted students to deepen or develop as a result of engaging in this task.
- How will they use this knowledge in the future?

Examining student work in light of the main ideas of the task.

- What do you notice?
- Find work that supports what you noticed.
- Create a claim you can make based on the work.
- List the student work to support the claim.
- Write questions you would like to ask in response to the student work.

Reflect

Individual, quiet reflection.
In what ways can you use the ideas discussed today in planning next year?

Is there anything you would add to your trajectory?

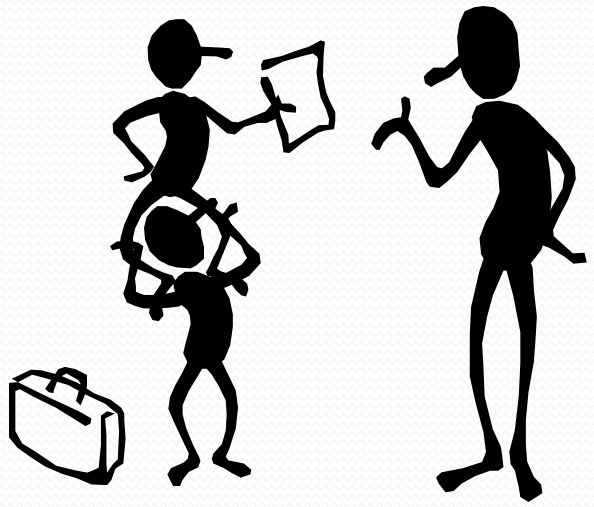
Comparing Tasks for Discourse

Goals:

- Describe worthwhile mathematical discourse.
- Discuss ways to set up and maintain worthwhile discourse in a classroom.
- Describe characteristics of tasks that have the potential to support worthwhile discourse.

Nature of Discourse

- What is the nature of conversations we want students to have in our math classrooms? Why?



Issues to consider

- What issues can arise in a classroom where the teacher expects students to engage in meaningful mathematical discourse?

Share your ideas

- How do you set up and maintain an environment that supports good discourse? Brainstorm as many ideas as you can.

Compare two tasks

- Imagine using Task A and Task B in two different Algebra 1 classes. Which task do you think will elicit richer mathematical discourse from and between students? Why: what characteristics of the tasks support this?

Solve the tasks

- Take a few minutes to solve the tasks and reflect on the mathematical ideas.
- What mathematical ideas could be highlighted in each task? What questions would you ask to get students to think about the ideas?

Managing Discourse

Suppose you choose to give Task B.

- How would you set up this task to maximize students' opportunities to engage in discourse that helps them make sense of the mathematical ideas?
- What would you be ready to answer?
- What types of difficulties would you expect from student and how could you respond?

Reflection

- What reasons do you have for incorporating more discussion between students in your classes?

Error Analysis

Goals:

- Examine student work to identify mathematical thinking and misconceptions;
- Brainstorm activities that could help students develop the understanding missing in the error.

Share your ideas

- What are some different strategies you have for handling student errors?
- What strategies could involve the standards for mathematical practices?
- Discuss in your small group and brainstorm several ideas.

Chalk Talk

Silently, only through writing, brainstorm and discuss:

1. The error(s): what error or difficulty is evidenced in the work? **What *conceptual* underpinnings may underlie the error?**

2. Describe some activities that you could use to help the students develop understanding.

Reflection

- What new ideas do you have about student errors and how to approach them?
- In what ways could you use a Chalk Talk with your students?

Lunch!

- Enjoy lunch in your choice of groups of 4-6 while you read and discuss The Effort Effect. ☺

Follow the protocol for discussion, then post:

- What are some practical things we can do to support a growth mindset in math class?

Lessons Learned 2012 EOC

Look over the Lessons Learned from scoring student work document:

- What surprises you?
- Choose something specific that your students can work on before taking the 2013 EOC and describe how you will address it.

Review Quiz

The questions on this quiz came from the 2013 Updates document.

- Take the quiz and estimate how your students will perform on each question.
- Give the quiz to your students before the end of the school year and bring their work to the June workshop.

Break!!

Observing a Lesson Together

Goals:

- Observe and take notes on a portion of a lesson.
- Discuss how teacher and student questioning and engagement supported content purpose and the connections between teacher moves and content purpose.

Data Collection Sheet

- Each person is responsible for one focus.
- Record ***specific observable evidence*** in the space provided, and on the back as needed.

Video: Staircase

- http://www.learner.org/resources/series34.html?pop=yes&pid=926

Discussion Protocol

- Identify a timer in the group
- Use protocol to structure conversation.
- ***Descriptions should be free of value judgments or any other commentary and be only facts that are verifiable on the video.***
- Have a recorder record the group's answers to the questions.

Discuss and be ready to share

- What was surprising or difficult about this process?
- How difficult was it for your group to arrive at a consensus about the purpose of the lesson and the effectiveness of the teachers' strategies in support of this purpose?
- What issues arose?

Your Tasks Due in June

- Student interest surveys.
- Review Quiz: Student work and results
- Set up observation.
- Share an idea on the Moodle and read and respond to others' ideas.

Evaluations

- Your evaluations are important to us. They are not just for clock hours, they guide and inform our work.

- Please take time to give thoughtful and complete responses. You may identify yourself or may remain anonymous.