

## **Before, During, and After: Suggestions for Viewing and Dialoguing About the Webcast**

### **Webcast 2: *Ratio and Proportion Across the Standards – Focus on Multiple-Choice Items***

This webcast models professional discussion and decision-making using performance data for released items assessing proportional reasoning from state and national tests. Panelists include Brian Roget (Ohio Department of Education), Kay Wallace (Pickerington City Schools) and Bob Reynolds (Forest Hills City Schools). Peggy Kasten from the Ohio Resource Center for Mathematics, Science and Reading (ORC) is the moderator.

The panelists analyze released items for evidence of student understanding and misconceptions related to proportional reasoning and suggest strategies for improving student performance on similar items. The discussion includes a variety of specific suggestions and general strategies for enhancing mathematics teaching and learning.

The webcast considers the following questions:

- Why is “proportion” an important concept?
- What do released items and data tell us about how well students are able to solve problems that require proportional reasoning?
- What makes proportional reasoning difficult to teach and for students to learn?
- What are some specific activities that help to address areas of weakness found when looking at proportion items?

This webcast affords greatest benefit to those who are able to view the webcast in groups. Suggested strategies and discussion tools are provided to enhance the viewing experience.

## **Suggested Strategy for Group Viewing**

The following strategy engages the members of a group viewing the webcast by initiating discussions and utilizing active listening techniques.

***Before viewing:*** Engage in a brief discussion with colleagues about concepts and skills associated with proportional reasoning and common misconceptions exhibited by students when solving proportion problems.

***While viewing:*** Make notes about significant ideas and suggested strategies shared by the panelists. For example, capture key messages on chart paper.

***After viewing:*** Discuss new information and ideas for changing curriculum and/or instruction gleaned from the panelists' discussion.

## Discussion Tool: Agree-Disagree Chart

(For use before and after viewing the webcast)

### Directions:

- Mark whether you agree or disagree with each statement in the left column before viewing the webcast.
- After viewing the webcast, discuss each statement as a group. Identify whether you agree or disagree with each statement in the right column.

<b><i>Before Viewing</i></b>	<b><i>Statement</i></b>	<b><i>After Viewing</i></b>
Agree    Disagree	Our students have an opportunity to learn all the content on the OGT.	Agree    Disagree
Agree    Disagree	There must be something wrong with an OGT question when more than 50% of the students statewide are unable to answer it correctly.	Agree    Disagree
Agree    Disagree	Our mathematics faculty should spend time together looking at the item analysis data for our students.	Agree    Disagree
Agree    Disagree	Our daily instruction adequately prepares students for the OGT.	Agree    Disagree

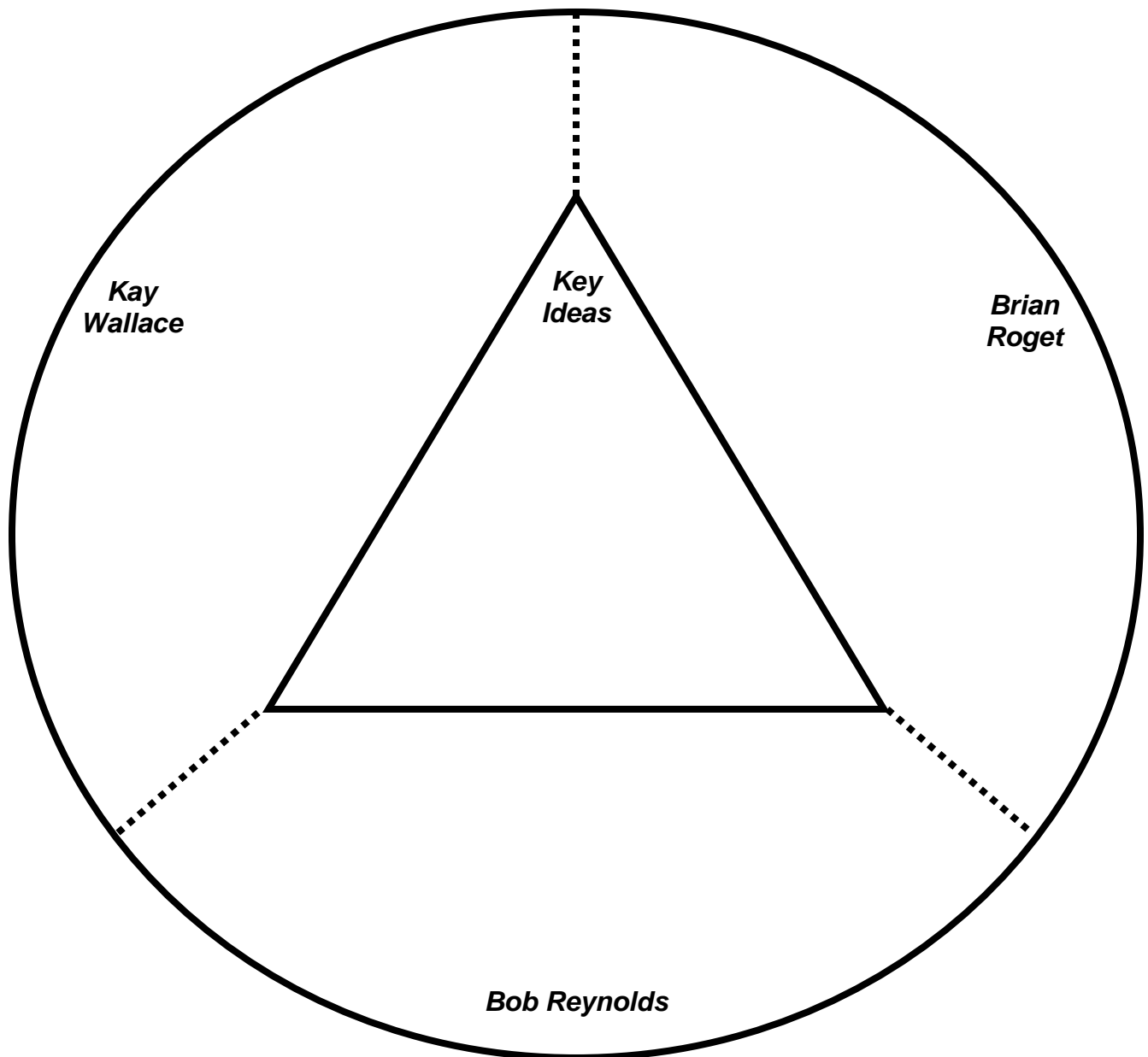
## Discussion Tool: Key Ideas Chart

*(For use during and after the webcast)*

The Key Ideas Chart is used by individuals or groups to capture and generate discussion about the ideas and strategies shared by the panelists.

### Directions:

- During the webcast, make note of important ideas shared by each panelist in the spaces provided.
- After the webcast, identify the idea(s) you find most important for strengthening students' proportional reasoning. Think about how you would apply this idea in your teaching – be specific. Record your thoughts in the "Key Ideas" section. Discuss the ideas selected by individual members of the group and develop consensus around key ideas for further investigation and action.





## **Discussion Tool: Sample Discussion Questions**

*(For use after the webcast)*

How well does our mathematics program prepare students to use proportions to solve problems? The discussion questions below can be used after viewing the webcast to engage mathematics departments and district teams in a discussion about teaching and learning proportional reasoning.

- What evidence do we have that students in our building/district develop conceptual understanding, procedural skills, and proportional reasoning to solve problems across the grades/courses in our mathematics program?
- How can more and richer evidence be gathered?
- How is the learning of proportion-related concepts and skills “scaffolded” from primary to elementary to middle to high school in a manner to build student understanding and confidence?
- What opportunities do students have to apply a variety of strategies, such as unit-rate, factor-of-change, equivalent ratios, and cross-products, in different contextual settings?
- How do students demonstrate their understanding of and facility with proportional thinking?

## **Discussion Tool: Taking Action**

*(For use by mathematics faculties analyzing their own item analysis data)*

***Specific mathematics concepts and skills to investigate in our curriculum:***  
(e.g., when do students begin learning about ratios? rates? proportions?)

***Instructional strategies that should receive increased focus:***  
(e.g., helping students recognize where proportions are used in various topics, such as slope, scale drawings, probability, similar triangles, ...)