Seating

- Sit with people from your grade band
  - Elementary on the right as you face the screen
  - Middle school in the middle
  - Secondary on the left as you face the screen
- Mix K-12 and higher education participants
- Don’t sit with people from your institution
- Connect your laptop or tablet to the wireless network
Session goals

- Dig into some standards
- Explore some resources
  - Learning progressions
  - Curriculum progressions
  - Tasks
- Experience the standards for mathematical practice
Let’s do some math!

- 4/11 of the students in the music hall are boys. There are 84 more girls than boys. How many children are in the music hall?
- 7.RP.A.2b: Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
- Practices—which ones did you use?
Mathematical Practices

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.
- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.
Students with this task

- **Video**

- **What practices did you see students using?**
  - Make sense of problems and persevere in solving them.
  - Reason abstractly and quantitatively.
  - Construct viable arguments and critique the reasoning of others.
  - Model with mathematics.
  - Use appropriate tools strategically.
  - Attend to precision.
  - Look for and make use of structure.
  - Look for and express regularity in repeated reasoning.
The Structure of the Standards

<table>
<thead>
<tr>
<th>Ratios and Proportional Relationships</th>
<th>7.RP</th>
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<tbody>
<tr>
<td><strong>Analyze proportional relationships and use them to solve real-world and mathematical problems.</strong></td>
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<tr>
<td>1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction ( \frac{\frac{1}{2}}{\frac{1}{4}} ) miles per hour, equivalently 2 miles per hour.</td>
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<tr>
<td>2. Recognize and represent proportional relationships between quantities.</td>
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<tr>
<td>a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.</td>
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<tr>
<td>b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</td>
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<tr>
<td>c. Represent proportional relationships by equations. For example, if total cost ( t ) is proportional to the number ( n ) of items purchased at a constant price ( p ), the relationship between the total cost and the number of items can be expressed as ( t = pn ).</td>
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<tr>
<td>d. Explain what a point ((x, y)) on the graph of a proportional relationship means in terms of the situation, with special attention to the points ((0, 0)) and ((1, r)) where (r) is the unit rate.</td>
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<tr>
<td>3. Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</td>
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</tbody>
</table>
Getting to know the standards

- Elementary: 4NF standards 3 & 4
- Middle grades: 7RP standards 1 & 2
- Secondary: HSF-LE.A standards 1b & 5
Point your browser to...

- https://sites.google.com/site/sccommoncore/home
Progressions

- Narratives prepared by writers of common core
- In teacher-friendly language
- With lots of illustrations
- Include elaborations on definitions
- Include sample tasks
Curriculum Trajectories

- Shows relationship of various topics in CCSSM
- (Not yet available for high school)
Sample tasks