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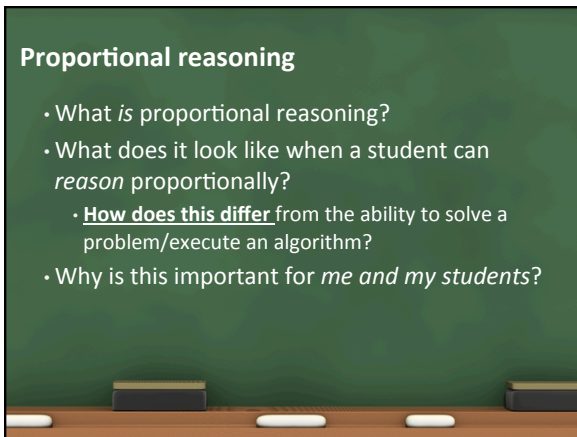
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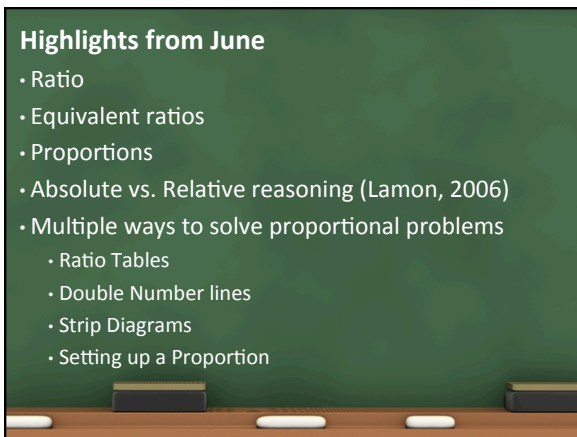
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**Example 1.**

- A. How much orange concentrate should we use with 48 cups of water, if we want to get orange juice that tastes the same as a mixture that uses 3 cups of concentrate for every 4 cups of water?
- B. How much concentrate should we use to make 105 cups of orange juice?

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**Example 2. Mary, Megan, and Chocolate!**

- Mary and Megan share a chocolate bar. If Mary's part is  $\frac{3}{4}$  times as large as Megan's part, then
  - a. What is the ratio of Mary's to Megan's part?
  - b. How large is Megan's piece compared to Mary's?
  - c. What is the ratio of Megan's to Mary's part?
  - d. How much of the bar is Mary's part? and Megan's?
- What if Mary's is  $\frac{3}{2}$  times the size of Megan's?

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**How would you solve these problems**

1. Jake drove 72 miles during the first hour of his trip. How long will it take to drive the entire 144 miles of his trip?
2. In a pie-eating contest, Juarez ate two pies in the first five minutes. How many pies can he eat in one hour?
3. It took Denise 20 minutes to complete 10 out of the 20 problems that were assigned. How long will it take her to complete all 20 problems?
4. Jim can mow the lawn in 45 minutes. Today Janyce is helping him. How long will it take for the two of them to mow the lawn?
5. Today is Sally's birthday. She is 7 years old. At some time in the future, John will have his 39th birthday. At that time, he will be 3 times as old as Sally. How old is John now?

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Proportional thinkers can identify proportional from non-proportional situations, and **will not blindly set up a proportion** if the situation does not involve a proportional relationship.

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**Can we always use proportions?**  
**Think-pair-share**  
 What are the characteristics of proportional situations?

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**Can we always use proportions?**

1. If you travel to a foreign country, you exchange dollars for the currency used there. In England you could exchange \$3 for 2 pounds. How many pounds could you exchange for \$21?
2. Sue and Julie were running equally fast around a track. Sue started first. When she had run 9 laps, Julie had run 3 laps. When Julie had completed 15 laps, how many laps had Sue run?

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**Activity 1: Students' Work**

We will work on this in two groups:

- One group stays here (with Fabiana):  
2<sup>nd</sup>- 5<sup>th</sup> grade teachers and math coaches.
- Another group in Room TBA (with Álvaro):  
6<sup>th</sup> grade – high school teachers.

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**Why is this important?**

- What is proportional reasoning?
- Why do our students need to learn to reason this way?
- What do our students struggle with?
- How can we support them? Early grades? Later on?

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