4.2b Classroom Activity: Mixing Lemonade—Expressing Proportionality

Review: Recall the sunflower and rose example from 4.1a. There the ratio of sunflowers to roses was 1:3. We also noted that 25% of the flowers in the example were sunflowers because 1 in 4 of the parts were sunflowers.

You want to sell lemonade by the park. Different brands of lemonade have different formulas. You want to sell the lemonade that tastes the most "lemony."

a. Use a model to show the portion of mixture that is lemon concentrate.
b. What fraction of the mix is concentrate? What fraction is water?
c. What percent of the mix is concentrate? What percent is water?
d. Create a unit rate $\frac{water}{concentrate}$ for each mixture.

1. 2 cups concentrate, 3 cups water a. b. c. d.	2. 4 cups water mixes with 1 cup concentrate a. b. c. d.
3. 4 cups concentrate, 6 cups water a. b. c. d.	4. 3 cups concentrate, 5 cups water a. b. c. d.

5. $\frac{1}{2}$ cup concentrate, 2 cups water a. b. c. d.	6. 8 cups water for 4 cups of concentrate a. b. c. d.
7. 1 cup water for every $\frac{2}{3}$ cup concentrate a. b. c. d.	8. $\frac{1}{2}$ cup concentrate, 1 cup water a. b. c. d.

9. Are any of the mixes (1-8) proportional? In other words, do any have the same unit rates? Explain how you know.

10. For the mixes that are proportional, how does the unit rate relate to the fraction or percent?

11. Which mix will make the strongest lemonade (most lemon flavor)? The weakest? Explain how you know.

12. Order the lemonade from weakest to strongest. Explain your order