DIG INTO INTERVENTION: FRACTION SUBTRACTION

Presented by MathLinks Author
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For more information about our core programs for middle school and intervention programs for grades 6-9, please visit:

www.mathandteaching.org

In this session, you will learn:

- Some models for illustrating fraction subtraction
- Some strategies for subtracting fractions

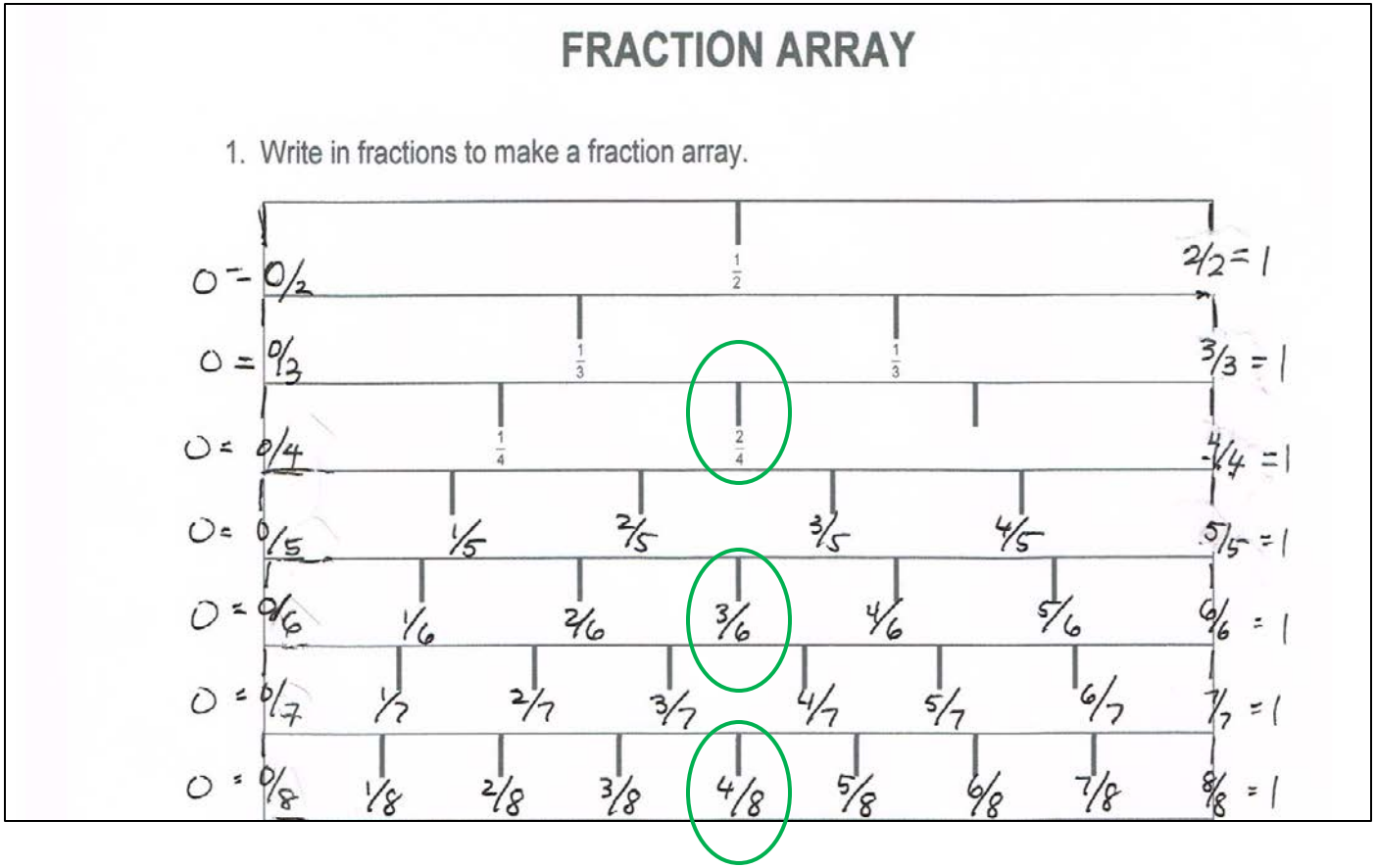
Philosophy

Many learners struggle with fractions in middle school and beyond. Our intervention work:

- Reviews elementary topics from a more mature perspective
- Develops concepts using sense making strategies
- Uses horizontal recording techniques that help prepare students for algebra

Assumptions

Students understand fraction meaning and equivalence.



Assumptions

Students can rename fractions using "the big 1."

Diagram 1

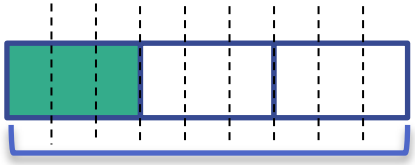
$\frac{1}{3}$

1 whole

$$\frac{1}{3} \cdot \frac{3}{3} = \frac{3}{9}$$

Diagram 2

$\frac{3}{9}$

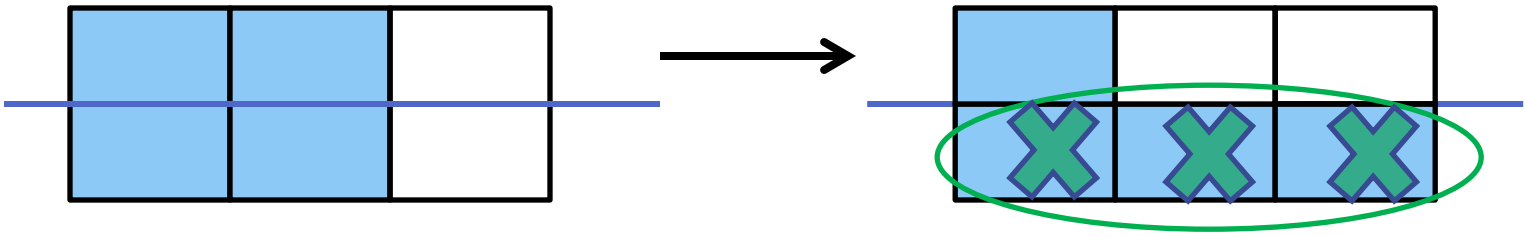


1 whole

Strategies/Approaches

- Use a diagram
- Use mental math
- Use paper and pencil calculations

Subtract: $\frac{2}{3} - \frac{1}{2}$



$\frac{2}{3} = \frac{4}{6}$

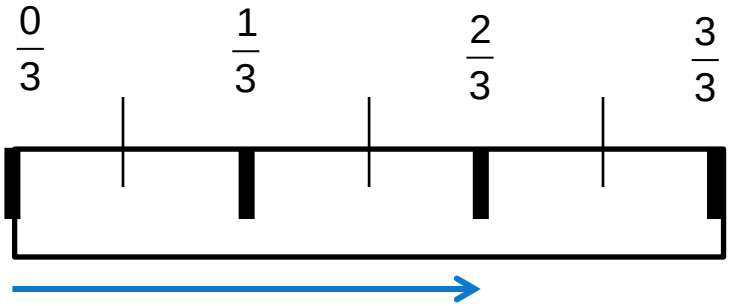
$\frac{1}{2} = \frac{3}{6}$

$$\frac{2}{3}\left(\frac{2}{2}\right) - \frac{1}{2}\left(\frac{3}{3}\right)$$

$$= \frac{4}{6} - \frac{3}{6}$$

$$= \frac{1}{6}$$

Subtract: $\frac{2}{3} - \frac{1}{2}$



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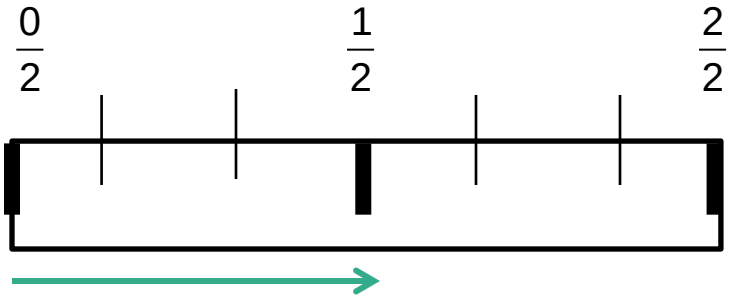
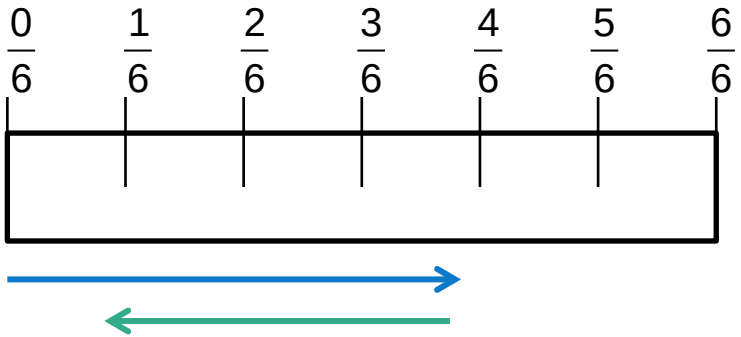


$\frac{1}{2} = \frac{3}{6}$

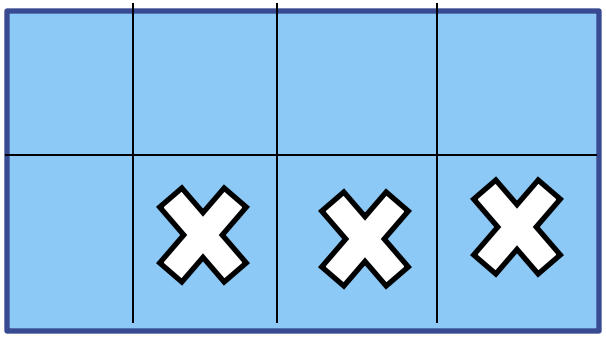


$$\frac{2}{3}\left(\frac{2}{2}\right) - \frac{1}{2}\left(\frac{3}{3}\right)$$

$$= \frac{4}{6} - \frac{3}{6}$$

$$= \frac{1}{6}$$

Subtract: $1-\frac{3}{8}$ (area model)

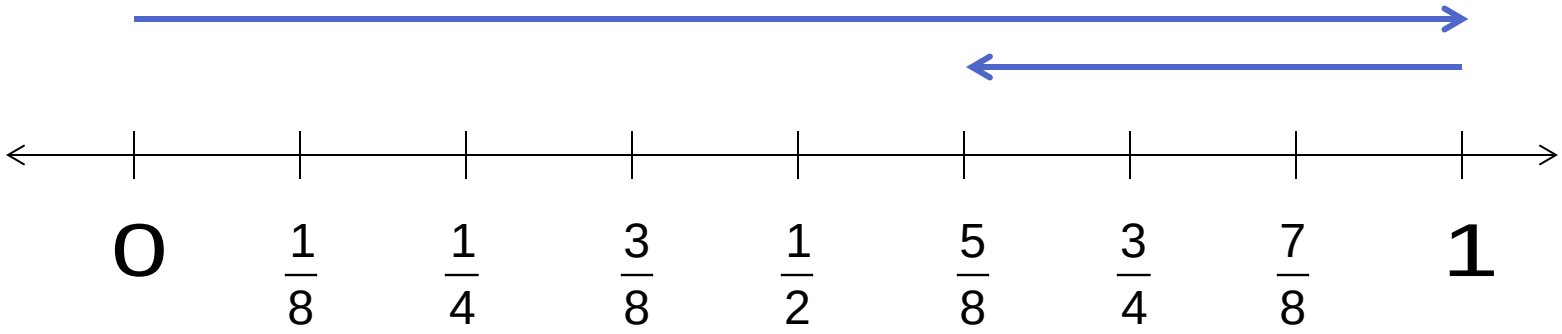


$$1-\frac{3}{8}=1\left(\frac{8}{8}\right)-\frac{3}{8}$$

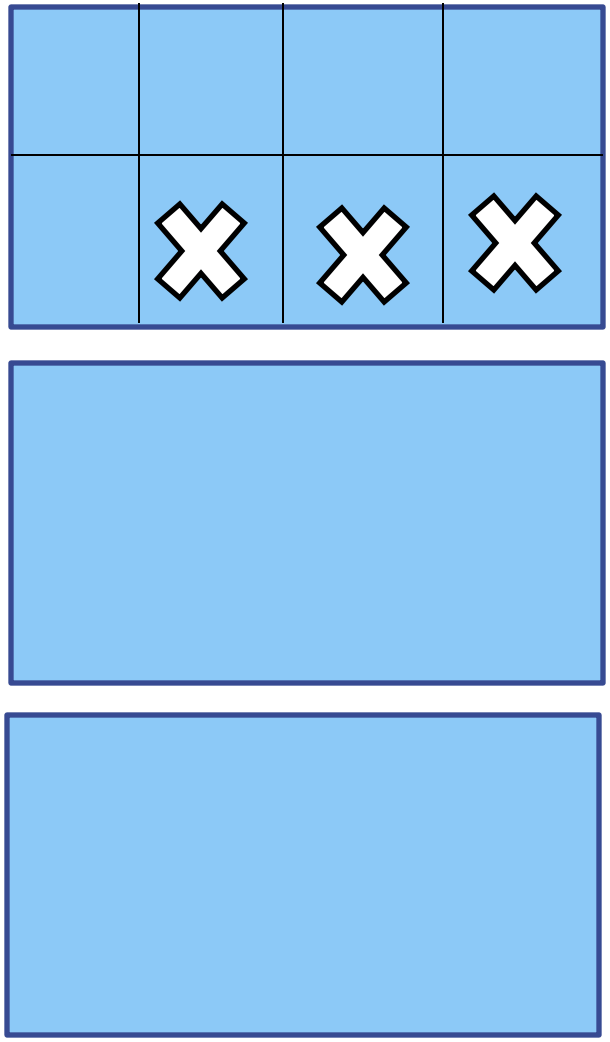
$$=\frac{8}{8}-\frac{3}{8}$$

$$=\frac{5}{8}$$

Subtract: $1 - \frac{3}{8}$ (linear model)



Subtract: $3-\frac{3}{8}$ (area model)

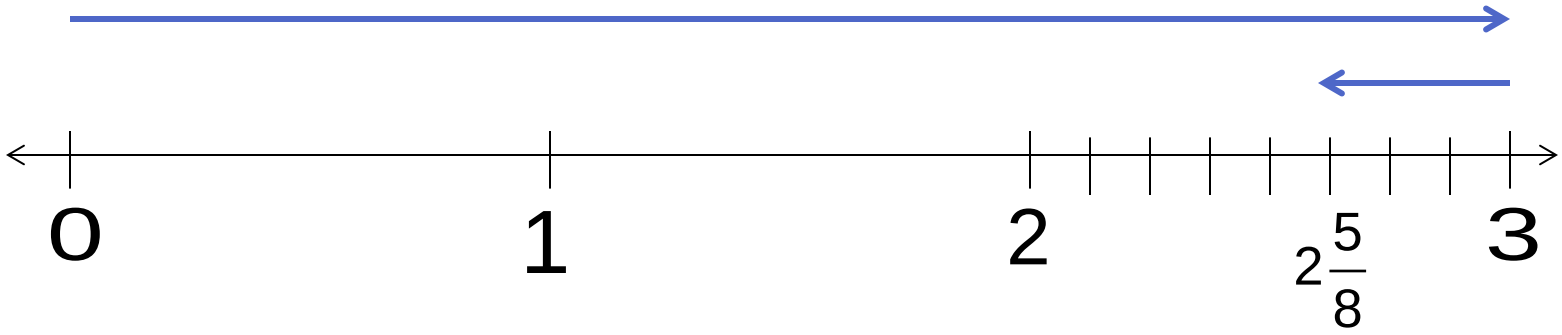


$$3-\frac{3}{8}=2+1-\frac{3}{8}$$

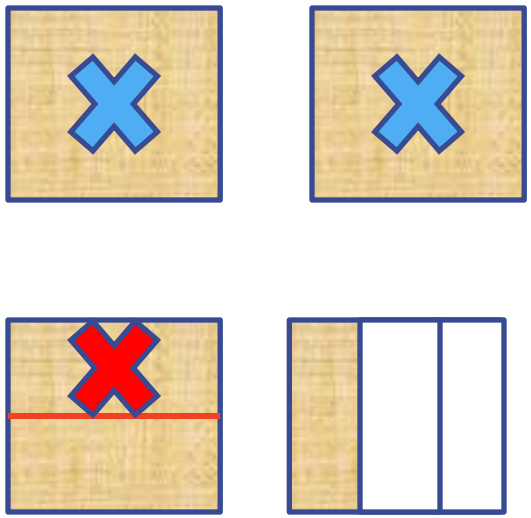
$$=2+\frac{5}{8}$$

$$=2\frac{5}{8}$$

Subtract: $3 - \frac{3}{8}$ (linear model)



You have three and one-thirds sandwiches. You give two and one-half sandwiches to a friend. How much remains?



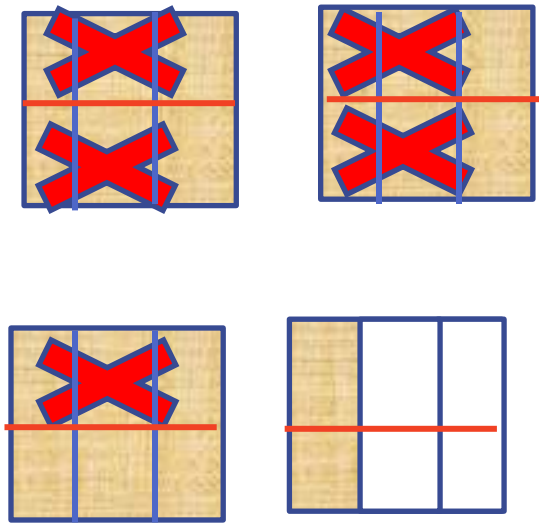
$$3\frac{1}{3}-2\frac{1}{2}=3+\frac{1}{3}-2-\frac{1}{2}$$

$$=1-\frac{1}{2}+\frac{1}{3}$$

$$=\left(1-\frac{1}{2}\right)+\frac{1}{3}$$

$$=\frac{1}{2}+\frac{1}{3}=\frac{5}{6}$$

You have three and one-thirds sandwiches. You give two and one-half sandwiches to a friend. How much remains?



$$3\frac{1}{3}-2\frac{1}{2} = \frac{10}{3} - \frac{5}{2}$$

$$= \frac{10}{3}\left(\frac{2}{2}\right)-\frac{5}{2}\left(\frac{3}{3}\right)$$

$$= \frac{20}{6}-\frac{15}{6}$$

$$= \frac{5}{6}$$

Sequence summary

1. $\frac{1}{5}+\frac{3}{5}$

2. $\frac{2}{3}-\frac{1}{2}$

3. $1\frac{2}{5}=1+\frac{2}{5}$

4. $6\frac{1}{3}+2\frac{1}{4}+4\frac{2}{3}$

5. $1-\frac{3}{8}$

6. $3-\frac{3}{8}$

7. $2\frac{3}{4}+1\frac{1}{8}$

8. $3\frac{1}{3}-2\frac{1}{2}$

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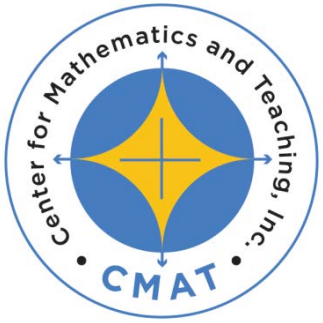

OUR PROGRAMS:

- Comprehensive 6-8 curriculum
- Customized intervention grades 6-9
- Special Education programs
- Supplemental programs

For more information, please visit our website at www.mathandteaching.org

THANK YOU!

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