MSM6

Lesson 5-6

Estimating Fraction Sums and Differences

Preview

- Vocabulary
- SWBATs
- Skills – Fuzzy Estimations
- Skills – Crisp Estimations
- Homework

Vocabulary

- Estimate – to judge tentatively $\frac{a}{b}$ or approximately the value, worth, or significance of (MW-11th)
- Fraction – Comes from the Latin word *frangere*, which means “to break.”
- Estimate – Comes from the Latin word *aestimatus*, which means “to value.”

SWBAT learn to estimate sums and differences of fractions and mixed numbers.

- Skills (Estimating Fractions)
  - Estimate each sum or difference by rounding to 0, ½, or 1
- Skills (Fuzzy Estimation)
  - Closer to 0 – Each numerator is much less than half the denominator, so the fraction is closer to 0.
  - Closer to ½ - Each numerator is much less than half the denominator, so the fraction is closer to 1/2.
  - Closer to 1 - Each numerator is much less than half the denominator, so the fraction is closer to 1.
- Skills (Crisp Estimation)
  - Less than ¼ estimate as 0
  - Greater than or equal to ¼ but less than ¾ then estimate as ½ .
  - Greater than or equal to ¾ then estimate as 1.

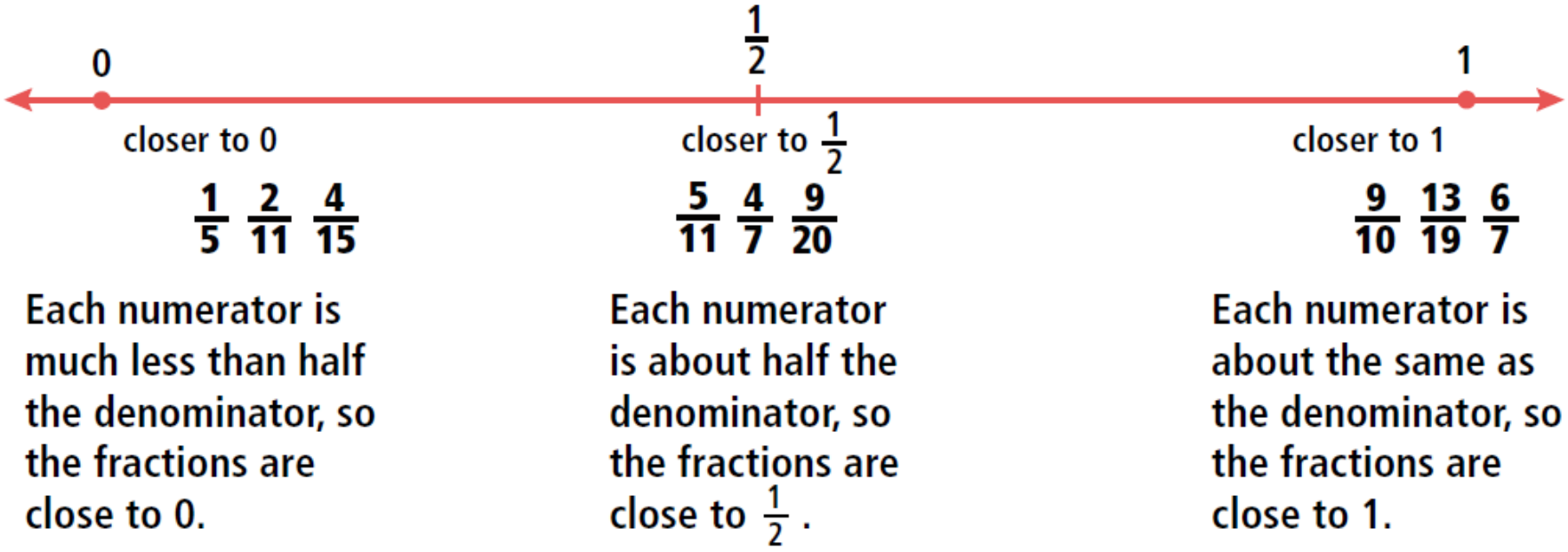
Fuzzy Estimation

Skills (Fuzzy Estimation)

Closer to 0 – Each numerator is much less than half the denominator, so the fraction is closer to 0.

Closer to ½ - Each numerator is much less than half the denominator, so the fraction is closer to 1/2.

Closer to 1 - Each numerator is much less than half the denominator, so the fraction is closer to 1.



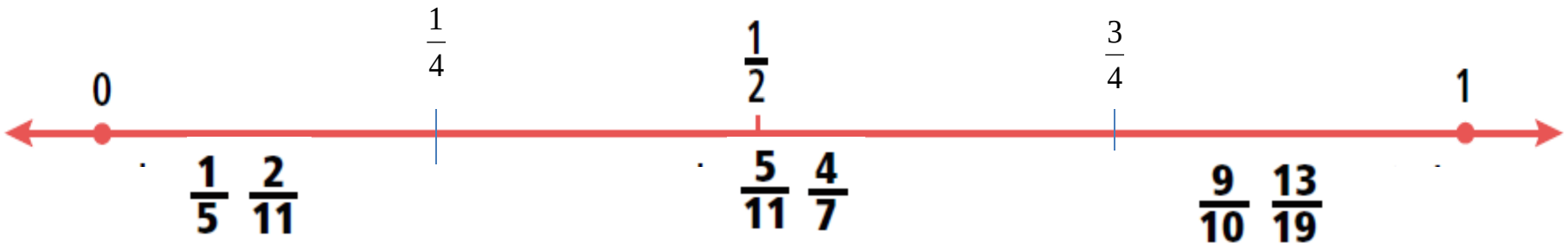
Crisp Estimation

Skills (Crisp Estimation)

Less than ¼ estimate as 0

Greater than or equal to ¼ but less than ¾ then estimate as ½ .

Greater than or equal to ¾ then estimate as 1.



Rounding Exercise

Round each number to 0, $\frac{1}{2}$, or 1.

1. $\frac{1}{6}$ _____ **2.** $\frac{3}{7}$ _____ **3.** $\frac{7}{8}$ _____

4. $\frac{2}{5}$ _____ **5.** $\frac{9}{10}$ _____ **6.** $\frac{2}{15}$ _____

Rounding Exercise

Round each number to 0, $\frac{1}{2}$, or 1. Possible answers:

1. $\frac{1}{6}$ 0

2. $\frac{3}{7}$ $\frac{1}{2}$

3. $\frac{7}{8}$ 1

4. $\frac{2}{5}$ $\frac{1}{2}$

5. $\frac{9}{10}$ 1

6. $\frac{2}{15}$ 0

Adding Fraction Estimates

Estimate each sum or difference by rounding to 0, $\frac{1}{2}$, or 1.

A. $\frac{6}{7} + \frac{3}{8}$

$\frac{6}{7} + \frac{3}{8}$

Think: $\frac{6}{7}$ rounds to 1 and $\frac{3}{8}$ rounds to $\frac{1}{2}$.

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

$\frac{6}{7} + \frac{3}{8}$ is **about** $1\frac{1}{2}$.

Subtracting Fraction Estimates

Estimate each sum or difference by rounding to 0, $\frac{1}{2}$, or 1.

B. $\frac{9}{10} - \frac{7}{8}$

$\frac{9}{10} - \frac{7}{8}$

Think: $\frac{9}{10}$ rounds to 1 and $\frac{7}{8}$ rounds to 1.

$1 - 1 = 0$

$\frac{9}{10} - \frac{7}{8}$ is **about** 0.

Sum and Difference Exercise

Estimate each sum or difference by rounding to 0, $\frac{1}{2}$, or 1.

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

_____

8. $\frac{5}{6} - \frac{3}{5}$

_____

9. $\frac{4}{9} + \frac{1}{8}$

_____

10. $\frac{8}{9} - \frac{6}{7}$

_____

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

_____

12. $\frac{3}{4} - \frac{2}{3}$

_____

13. $\frac{4}{7} + \frac{3}{5}$

_____

14. $\frac{1}{5} + \frac{4}{9}$

_____

15. $\frac{3}{4} - \frac{4}{7}$

_____

Sum and Difference Exercise

Estimate each sum or difference by rounding to 0, $\frac{1}{2}$, or 1.

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

$1\frac{1}{2}$

8. $\frac{5}{6} - \frac{3}{5}$

$\frac{1}{2}$

9. $\frac{4}{9} + \frac{1}{8}$

$\frac{1}{2}$

10. $\frac{8}{9} - \frac{6}{7}$

0

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

1

12. $\frac{3}{4} - \frac{2}{3}$

$\frac{1}{2}$

13. $\frac{4}{7} + \frac{3}{5}$

1

14. $\frac{1}{5} + \frac{4}{9}$

$\frac{1}{2}$

15. $\frac{3}{4} - \frac{4}{7}$

$\frac{1}{2}$

Assessment

Estimate each sum or difference by rounding to 0, $\frac{1}{2}$, or 1.

1. $\frac{9}{10} - \frac{2}{5}$

2. $\frac{3}{8} + \frac{8}{9}$

3. $\frac{10}{11} - \frac{8}{9}$

4. $\frac{1}{4} + \frac{8}{15}$

5. The conservation club picked up trash along the road for three weeks. The table shows the number of pounds of trash they collected. About how many pounds did they collect in weeks 2 and 3?

Week	Pounds Picked Up
1	$18\frac{1}{2}$
2	$16\frac{1}{3}$
3	$20\frac{9}{10}$

Homework

- (Lesson 5-6) Estimating Fraction Sums and Differences, pp. 236 – 239
- Homework - Online Quia Other Quizzes, MSM6 Lesson 5-6, Estimating Fraction Sums and Differences, problems 1-6.
- OR
- Homework – Textbook, Practice and Problem Solving, p. 238, even numbered problems 14-24.