

Recognize that the fraction depends on the whole

NAME	DATE	SCORE / 10
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1 Ana eats $\frac{1}{2}$ of a small cake. Cleo eats $\frac{1}{2}$ of a large cake. Who eats more cake, and why?

- ☐ Both eat the same amount, because both eat $\frac{1}{2}$.
- ☐ Ana, because $\frac{1}{2}$ of a smaller whole is more.
- ☐ Cleo, because $\frac{1}{2}$ of a larger whole is more.

2 Maya cuts off $\frac{3}{4}$ of a short rope. Ivy cuts off $\frac{3}{4}$ of a long rope. Maya says the two pieces are the same length, because both are $\frac{3}{4}$. Explain why Maya is not right.

3 Ivy eats $\frac{1}{3}$ of a small pizza. Leo eats $\frac{1}{3}$ of a large pizza. Who eats more pizza, and why?

- ☐ Ivy, because $\frac{1}{3}$ of a smaller whole is more. ☐ Leo, because $\frac{1}{3}$ of a larger whole is more.
- ☐ Both eat the same amount, because both eat $\frac{1}{3}$.

4

Emma cuts off $\frac{1}{2}$ of a short rope. Dev cuts off $\frac{1}{2}$ of a long rope. Emma says the two pieces are the same length, because both are $\frac{1}{2}$. Explain why Emma is not right.

5

Cleo cuts off $\frac{3}{4}$ of a short rope. Maya cuts off $\frac{3}{4}$ of a long rope. Whose piece is longer, and why?

- ☐ Cleo's piece, because $\frac{3}{4}$ of a shorter rope is longer.
- ☐ The pieces are the same length, because both are $\frac{3}{4}$.
- ☐ Maya's piece, because $\frac{3}{4}$ of a longer rope is longer.

6

Ben cuts off $\frac{1}{3}$ of a short ribbon. Ivy cuts off $\frac{1}{3}$ of a long ribbon. Ben says the two pieces are the same length, because both are $\frac{1}{3}$. Explain why Ben is not right.

7

Ana eats $\frac{2}{3}$ of a small cake. Ben eats $\frac{2}{3}$ of a large cake. Who eats more cake, and why?

- ☐ Ben, because $\frac{2}{3}$ of a larger whole is more.
- ☐ Ana, because $\frac{2}{3}$ of a smaller whole is more.
- ☐ Both eat the same amount, because both eat $\frac{2}{3}$.

8

Maya cuts off $\frac{2}{3}$ of a short ribbon. Noah cuts off $\frac{2}{3}$ of a long ribbon. Maya says the two pieces are the same length, because both are $\frac{2}{3}$. Explain why Maya is not right.

9

Ivy cuts off $\frac{2}{3}$ of a short rope. Noah cuts off $\frac{2}{3}$ of a long rope. Whose piece is longer, and why?

- ☐ The pieces are the same length, because both are $\frac{2}{3}$.
- ☐ Noah's piece, because $\frac{2}{3}$ of a longer rope is longer.
- ☐ Ivy's piece, because $\frac{2}{3}$ of a shorter rope is longer.

- 10** Leo cuts off $\frac{1}{2}$ of a short ribbon. Cleo cuts off $\frac{1}{2}$ of a long ribbon. Leo says the two pieces are the same length, because both are $\frac{1}{2}$. Explain why Leo is not right.

Recognize that the fraction depends on the whole

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- 1

Cleo, because $\frac{1}{2}$ of a larger whole is more.
- 3

Leo, because $\frac{1}{3}$ of a larger whole is more.
-
- 5

Maya's piece, because $\frac{3}{4}$ of a longer rope is longer.
- 7

Ben, because $\frac{2}{3}$ of a larger whole is more.
-
- 9

Noah's piece, because $\frac{2}{3}$ of a longer rope is longer.
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2

A written explanation

Ivy's rope

Maya's rope

A model answer: Maya's piece is $\frac{3}{4}$ of the short rope, and Ivy's piece is $\frac{3}{4}$ of the long rope. $\frac{3}{4}$ tells how much of its own whole is taken, so it depends on the whole. $\frac{3}{4}$ of a long rope is longer than $\frac{3}{4}$ of a short one, so Ivy's piece is longer.

What counts as right: Counts as right if it makes these points: (1) the two wholes are not the same size — one rope is longer; (2) $\frac{3}{4}$ means $\frac{3}{4}$ of its own whole, so the same fraction of a bigger whole is more; (3) so Ivy's piece is longer, and the pieces are not the same length. Only "both are $\frac{3}{4}$, so they are different" or a guess at which is longer, with no word about the wholes, does not count.

4 A written explanation

Dev's rope



Emma's



A model answer: Emma's piece is $\frac{1}{2}$ of the short rope, and Dev's piece is $\frac{1}{2}$ of the long rope. $\frac{1}{2}$ tells how much of its own whole is taken, so it depends on the whole. $\frac{1}{2}$ of a long rope is longer than $\frac{1}{2}$ of a short one, so Dev's piece is longer.

What counts as right: Counts as right if it makes these points: (1) the two wholes are not the same size — one rope is longer; (2) $\frac{1}{2}$ means $\frac{1}{2}$ of its own whole, so the same fraction of a bigger whole is more; (3) so Dev's piece is longer, and the pieces are not the same length. Only "both are $\frac{1}{2}$, so they are different" or a guess at which is longer, with no word about the wholes, does not count.

6 A written explanation

Ivy's ribbon



Ben's ribbon



A model answer: Ben's piece is $\frac{1}{3}$ of the short ribbon, and Ivy's piece is $\frac{1}{3}$ of the long ribbon. $\frac{1}{3}$ tells how much of its own whole is taken, so it depends on the whole. $\frac{1}{3}$ of a long ribbon is longer than $\frac{1}{3}$ of a short one, so Ivy's piece is longer.

What counts as right: Counts as right if it makes these points: (1) the two wholes are not the same size — one ribbon is longer; (2) $\frac{1}{3}$ means $\frac{1}{3}$ of its own whole, so the same fraction of a bigger whole is more; (3) so Ivy's piece is longer, and the pieces are not the same length. Only "both are $\frac{1}{3}$, so they are different" or a guess at which is longer, with no word about the wholes, does not count.

8

A written explanation

Noah's ribbon



Maya's ribbon



A model answer: Maya's piece is $\frac{2}{3}$ of the short ribbon, and Noah's piece is $\frac{2}{3}$ of the long ribbon. $\frac{2}{3}$ tells how much of its own whole is taken, so it depends on the whole. $\frac{2}{3}$ of a long ribbon is longer than $\frac{2}{3}$ of a short one, so Noah's piece is longer.

What counts as right: Counts as right if it makes these points: (1) the two wholes are not the same size — one ribbon is longer; (2) $\frac{2}{3}$ means $\frac{2}{3}$ of its own whole, so the same fraction of a bigger whole is more; (3) so Noah's piece is longer, and the pieces are not the same length. Only "both are $\frac{2}{3}$, so they are different" or a guess at which is longer, with no word about the wholes, does not count.

10

A written explanation

Cleo's ribbon



Leo's ribbon



A model answer: Leo's piece is $\frac{1}{2}$ of the short ribbon, and Cleo's piece is $\frac{1}{2}$ of the long ribbon. $\frac{1}{2}$ tells how much of its own whole is taken, so it depends on the whole. $\frac{1}{2}$ of a long ribbon is longer than $\frac{1}{2}$ of a short one, so Cleo's piece is longer.

What counts as right: Counts as right if it makes these points: (1) the two wholes are not the same size — one ribbon is longer; (2) $\frac{1}{2}$ means $\frac{1}{2}$ of its own whole, so the same fraction of a bigger whole is more; (3) so Cleo's piece is longer, and the pieces are not the same length. Only "both are $\frac{1}{2}$, so they are different" or a guess at which is longer, with no word about the wholes, does not count.