

Reasoning and Problem Solving

Step 5: Compare and Order by Denominator

National Curriculum Objectives:

Mathematics Year 6: (6F2) [Use common factors to simplify fractions; use common multiples to express fractions in the same denomination](#)

Mathematics Year 6: (6F3) [Compare and order fractions, including fractions > 1](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Find possible answers within parameters (where denominators are direct multiples of the same number).

Expected Find possible answers within parameters (where denominators are not always direct multiples of the same number).

Greater Depth Find possible answers within parameters (where denominators are not direct multiples of the same number).

Questions 2, 5 and 8 (Reasoning)

Developing Compare three fractions where denominators are direct multiples of the same number.

Expected Compare three fractions where denominators are not always direct multiples of the same number.

Greater Depth Compare three fractions where denominators are not direct multiples of the same number.

Questions 3, 6 and 9 (Reasoning)

Developing Solve a word problem by comparing three fractions where denominators are direct multiples of the same number.

Expected Solve a word problem by comparing three fractions where denominators are not always direct multiples of the same number.

Greater Depth Solve a word problem by comparing three fractions where denominators are not direct multiples of the same number.

More [Year 5 and Year 6 Fractions](#) resources.

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Compare and Order by Denominator

1a. Cian is thinking of a fraction. He says,

It is greater than $\frac{1}{2}$ but smaller than $\frac{3}{4}$. The denominator is 8.



Cian

Write down all possible fractions Cian could be thinking of.



6 PS

Compare and Order by Denominator

1b. Jake is thinking of a fraction. He says,

It is greater than $\frac{1}{4}$ but smaller than $\frac{3}{4}$. The denominator is an even number less than 8.



Jake

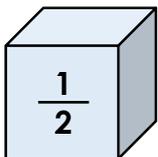
Write down all possible fractions Jake could be thinking of.



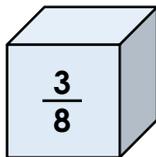
6 PS

2a. Ben is participating in a game show. He wants to choose the highest fraction of prize money to take home. The choices are:

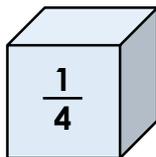
Box 1



Box 2



Box 3



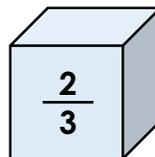
Which box should he choose? Explain how you know.



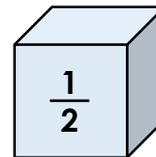
6 R

2b. Johnny is participating in a game show. He wants to choose the highest fraction of prize money to take home. The choices are:

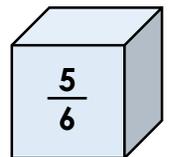
Box 1



Box 2



Box 3



Which box should he choose? Explain how you know.



6 R

3a. Hannah, Chuan and Alice are shopping for ribbon. They buy the following amounts:

Hannah buys $\frac{8}{12}$ of a roll.

Chuan buys $\frac{3}{6}$ of a roll.

Alice buys $\frac{3}{4}$ of a roll.

Who bought the most ribbon? Convince me.



6 R

3b. Ben, Hannah and Gabriel are shopping for string. They buy the following amounts:

Ben buys $\frac{2}{3}$ of a ball.

Hannah buys $\frac{1}{6}$ of a ball.

Gabriel buys $\frac{1}{2}$ of a ball.

Who bought the most string? Convince me.



6 R

Compare and Order by Denominator

4a. Johnny is thinking of a fraction. He says,

It is greater than $\frac{1}{3}$ but smaller than $\frac{3}{4}$. The denominator is an odd number between 3 and 7.



Johnny

Write down all possible fractions Johnny could be thinking of.



6 PS

Compare and Order by Denominator

4b. Hannah is thinking of a fraction. She says,

It is greater than $\frac{1}{2}$ but smaller than $\frac{7}{10}$. The denominator is an odd number less than 10.



Hannah

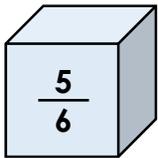
Write down all possible fractions Hannah could be thinking of.



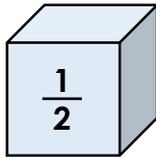
6 PS

5a. Cian is participating in a game show. He wants to choose the highest fraction of prize money to take home. The choices are:

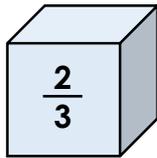
Box 1



Box 2



Box 3



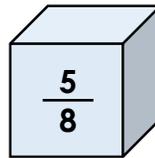
Which box should he choose? Explain how you know.



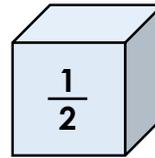
6 R

5b. Isabel is participating in a game show. He wants to choose the highest fraction of prize money to take home. The choices are:

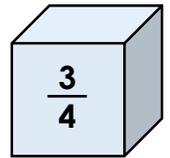
Box 1



Box 2



Box 3



Which box should he choose? Explain how you know.



6 R

6a. Isabel, Roy and Lucy are shopping for cotton. They buy the following amounts:

Isabel buys $\frac{1}{2}$ of a spool.

Chuan buys $\frac{3}{5}$ of a spool.

Lucy buys $\frac{3}{4}$ of a spool.

Who bought the most cotton? Convince me.



6 R

6b. Alice, Uma and Cian are shopping for ribbon. They buy the following amounts:

Alice buys $\frac{2}{3}$ of a roll.

Hannah buys $\frac{10}{12}$ of a roll.

Cian buys $\frac{1}{2}$ of a roll.

Who bought the most ribbon? Convince me.



6 R

Compare and Order by Denominator

7a. Hafsa is thinking of a fraction. She says,

It is greater than $\frac{3}{4}$ but smaller than $\frac{9}{10}$. The denominator is a number less than 10.



Hafsa

Write down all possible fractions Hafsa could be thinking of.



6 PS

Compare and Order by Denominator

7b. Sinead is thinking of a fraction. She says,

It is greater than $\frac{1}{2}$ but smaller than $\frac{6}{7}$. The denominator is an even number less than 8.



Sinead

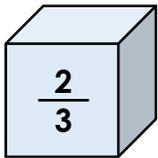
Write down all possible fractions Sinead could be thinking of.



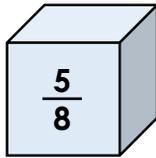
6 PS

8a. Alice is participating in a game show. She wants to choose the highest fraction of prize money to take home. The choices are:

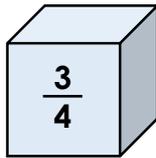
Box 1



Box 2



Box 3



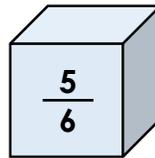
Which box should she choose? Explain how you know.



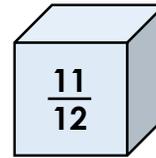
6 R

8b. Kelly is participating in a game show. She wants to choose the highest fraction of prize money to take home. The choices are:

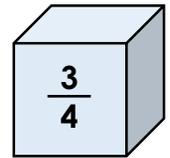
Box 1



Box 2



Box 3



Which box should she choose? Explain how you know.



6 R

9a. Josh, Jake and Alice are shopping for ribbon. They buy the following amounts:

Josh buys $\frac{5}{9}$ of a roll.

Jake buys $\frac{2}{3}$ of a roll.

Alice buys $\frac{1}{6}$ of a roll.

Who bought the most ribbon? Convince me.



6 R

9b. Ben, Johnny and Hannah are shopping for string. They buy the following amounts:

Ben buys $\frac{2}{3}$ of a ball.

Johnny buys $\frac{7}{12}$ of a ball.

Hannah buys $\frac{7}{8}$ of a ball.

Who bought the most string? Convince me.



6 R

Reasoning and Problem Solving Compare and Order by Denominator

Developing

1a. $\frac{5}{8}$

2a. Box 1 because it contains the largest fraction. This can be shown by finding the lowest common denominator of the three fractions: 8.

3a. Alice bought the most ribbon as $\frac{3}{4}$ is the largest fraction. This can be shown by finding the lowest common denominator of the three fractions: 8.

Expected

4a. $\frac{2}{5}$ or $\frac{3}{5}$

5a. Box 1 because it contains the largest fraction. This can be shown by finding the lowest common denominator of the three fractions: 6.

6a. Lucy bought the most ribbon as $\frac{3}{4}$ is the largest fraction. This can be shown by finding the lowest common denominator of the three fractions: 20.

Greater Depth

7a. $\frac{4}{5}$, $\frac{5}{6}$, $\frac{6}{7}$, $\frac{7}{8}$ or $\frac{8}{9}$

8a. Box 3 because it contains the largest fraction. This can be shown by finding the lowest common denominator of the three fractions: 24.

9a. Jake bought the most ribbon as $\frac{2}{3}$ is the largest fraction. This can be shown by finding the lowest common denominator of the three fractions: 18.

Reasoning and Problem Solving Compare and Order by Denominator

Developing

1b. $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{6}$

2b. Box 3 because it contains the largest fraction. This can be shown by finding the lowest common denominator of the three fractions: 6.

3b. Ben bought the most ribbon as $\frac{2}{3}$ is the largest fraction. This can be shown by finding the lowest common denominator of the three fractions: 6.

Expected

4b. $\frac{3}{5}$, $\frac{4}{7}$ or $\frac{7}{9}$

5b. Box 3 because it contains the largest fraction. This can be shown by finding the lowest common denominator of the three fractions: 8.

6b. Hannah bought the most ribbon as $\frac{10}{12}$ is the largest fraction. This can be shown by finding the lowest common denominator of the three fractions: 12.

Greater Depth

7b. $\frac{3}{4}$ or $\frac{5}{6}$

8b. Box 2 because it contains the largest fraction. This can be shown by finding the lowest common denominator of the three fractions: 12.

9b. Hannah bought the most ribbon as $\frac{7}{8}$ is the largest fraction. This can be shown by finding the lowest common denominator of the three fractions: 24.