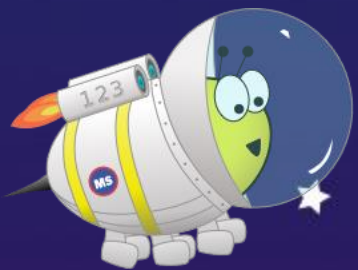


# MathShed

Lesson 6: To be able to compare and order improper fractions and mixed numbers



To be able to compare and order improper fractions and mixed numbers

## Success criteria:

- ✓ I can apply my equivalent fractions knowledge by comparing and ordering fractions greater than 1 – both in improper fraction and mixed number form – that have common multiple denominators
- ✓ I can explain my reasoning when applying my equivalent fractions knowledge by comparing and ordering fractions greater than 1 – both in improper fraction and mixed number form – that have common multiple denominators

Think Aloud -

<https://www.loom.com/share/bb0fed931e804205a2f6094a5ae5bc325>

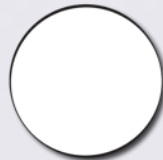


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## Talking Time:

Use the bar models below to compare  $\frac{5}{4}$  and  $\frac{3}{2}$ .

$$\frac{5}{4}$$



$$\frac{3}{2}$$

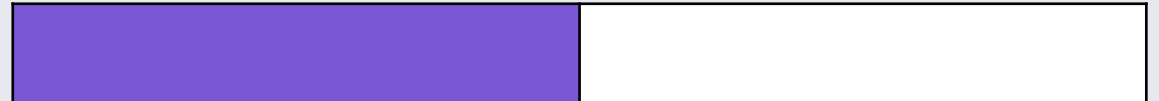


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Answers:

Talking Time:

Use the bar models below to compare  $\frac{5}{4}$  and  $\frac{3}{2}$ .



$$\frac{5}{4}$$



$$\frac{3}{2}$$

Think Aloud -

<https://www.loom.com/share/5ff1bd3c61cb4a509ea26ef7a9dee6a8>

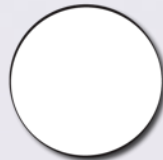


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## Talking Time:

Use the bar models below to compare  $\frac{4}{3}$  and  $\frac{11}{6}$ .

$$\frac{4}{3}$$



$$\frac{11}{6}$$



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Answers:

Talking Time:

Use the bar models below to compare  $\frac{4}{3}$  and  $\frac{11}{6}$ .



$$\frac{4}{3}$$



$$\frac{11}{6}$$

Have a go at solving these. Remember, if the numerator is bigger than the denominator you will need to draw more than one bar per fraction. The denominator tells us how many in a whole one and the numerator how many to colour.



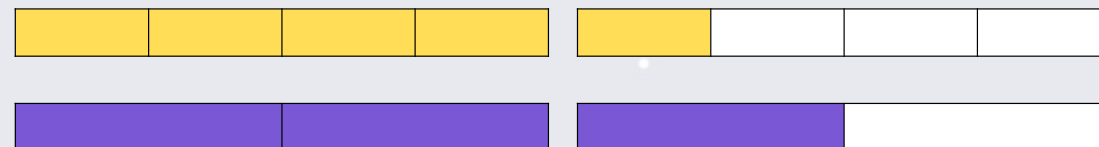
Use bar models to compare the following:

a)

$$\frac{5}{3}$$



$$\frac{7}{6}$$



b)

$$\frac{4}{3}$$

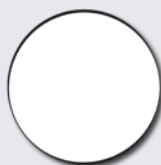


$$\frac{17}{12}$$

$$\frac{5}{4} < \frac{3}{2}$$

c)

$$\frac{7}{4}$$



$$\frac{15}{8}$$

Answers:

## Activity 1:

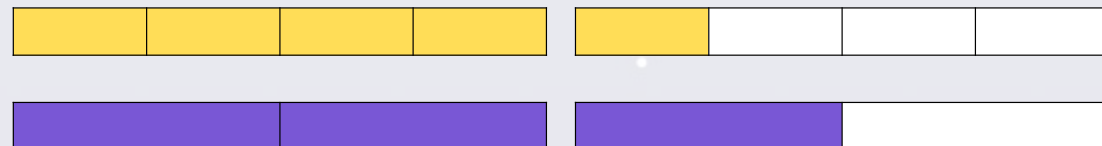
Use bar models to compare the following:

a)

$$\frac{5}{3}$$



$$\frac{7}{6}$$



b)

$$\frac{4}{3}$$



$$\frac{17}{12}$$



c)

$$\frac{7}{4}$$



$$\frac{15}{8}$$



Think Aloud -

<https://www.loom.com/share/a1ae7fd8d76a43a890af9a3a20007f22>

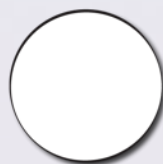


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## Talking Time:

Use the bar models below to compare  $1\frac{3}{4}$  and  $1\frac{1}{2}$ .

$$1\frac{3}{4}$$



$$1\frac{1}{2}$$

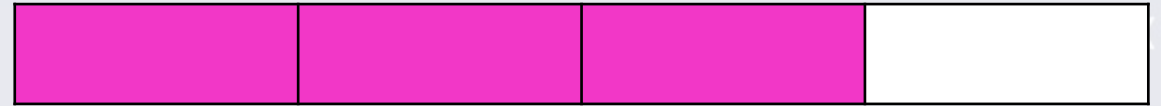


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Answers:

Talking Time:

Use the bar models below to compare  $1\frac{3}{4}$  and  $1\frac{1}{2}$ .



$$1\frac{3}{4}$$



$$1\frac{1}{2}$$

Think Aloud -

<https://www.loom.com/share/9fa1fac206954230857a0acfc31e6de1>



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## Talking Time:

Use the bar models below to compare  $1\frac{3}{8}$  and  $1\frac{1}{2}$ .

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

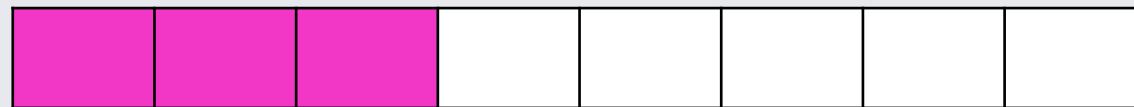
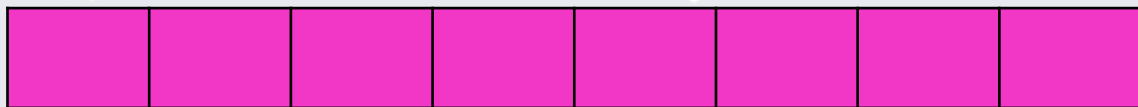


$$1\frac{1}{2}$$

Answers:

## Talking Time:

Use the bar models below to compare  $1\frac{3}{8}$  and  $1\frac{1}{2}$ .



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



$$1\frac{1}{2}$$

Have a go at solving these questions independently. Draw bar models to help you. Remember, they must be the same size!

## Activity 2:

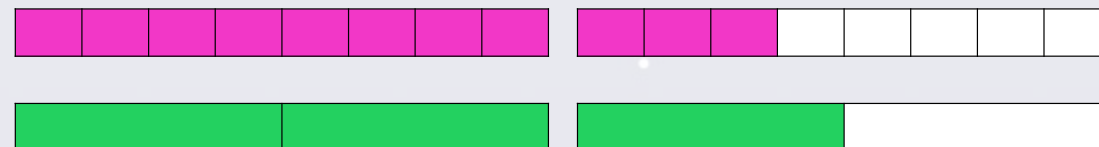
Use bar models to compare the following:

a)

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



$$1\frac{1}{4}$$



b)

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

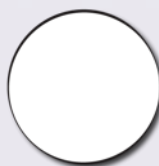


$$1\frac{7}{9}$$

$$1\frac{3}{8} > 1\frac{1}{2}$$

c)

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



$$2\frac{5}{12}$$

Answers:

## Activity 2:

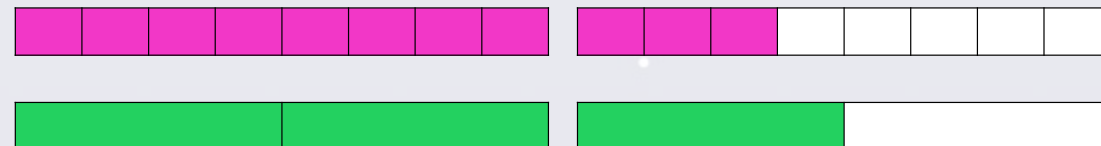
Use bar models to compare the following:

a)

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



$$1\frac{1}{4}$$



b)

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



$$1\frac{7}{9}$$

$$1\frac{3}{8} > 1\frac{1}{2}$$

c)

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



$$2\frac{5}{12}$$

Think Aloud -

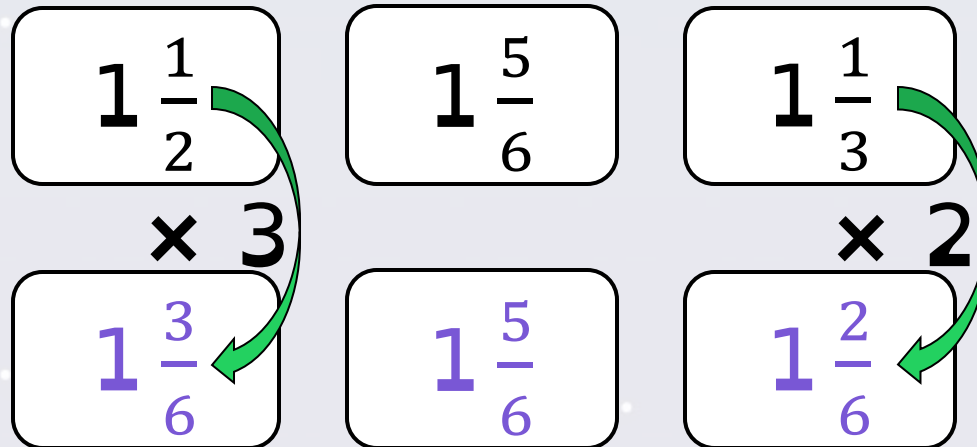
<https://www.loom.com/share/73d0817109e34d539626102aa85ceee>



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## Talking Time:

Re-arrange the following mixed numbers in order from smallest to greatest.





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Answers:

Talking Time:

Re-arrange the following mixed numbers in order from smallest to greatest.

$1\frac{1}{2}$	$1\frac{5}{6}$	$1\frac{1}{3}$
$\times 3$		$\times 2$
$1\frac{3}{6}$	$1\frac{5}{6}$	$1\frac{2}{6}$
$1\frac{1}{3}$	$1\frac{1}{2}$	$1\frac{5}{6}$



Think Aloud -

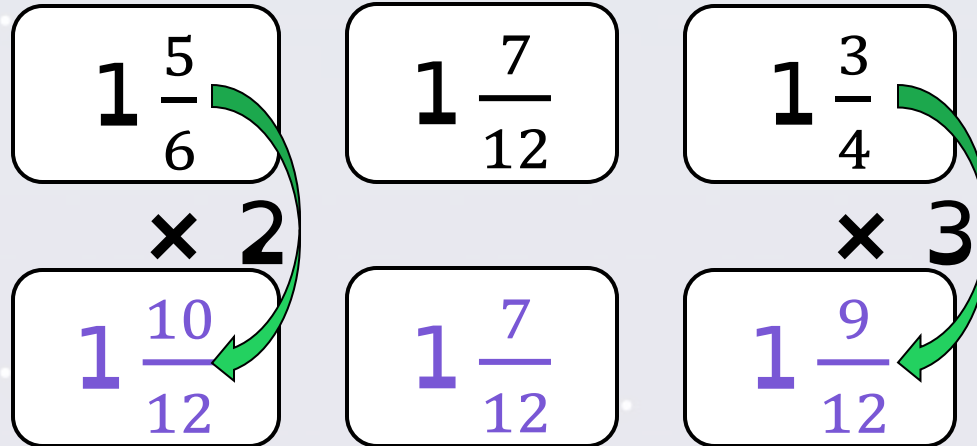
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## Talking Time:

Re-arrange the following mixed numbers in order from smallest to greatest.



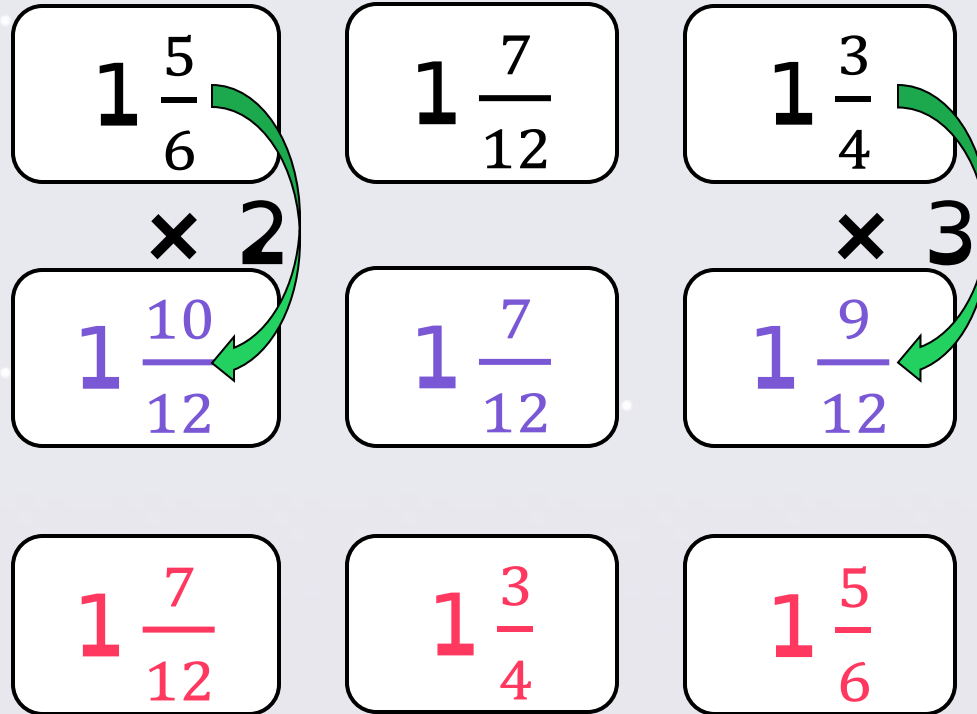


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Answers:

Talking Time:

Re-arrange the following mixed numbers in order from smallest to greatest.



Solve each of these questions using multiplication to convert your fractions to have the same denominator.



### Activity 3:

Re-arrange the following mixed numbers in order from smallest to greatest.

a)  $1\frac{7}{8}$   $1\frac{1}{2}$   $1\frac{3}{4}$

b)  $1\frac{2}{3}$   $1\frac{3}{4}$   $1\frac{7}{12}$

c)  $1\frac{7}{8}$   $1\frac{11}{16}$   $1\frac{3}{4}$

d)  $1\frac{9}{10}$   $1\frac{17}{20}$   $1\frac{3}{5}$

$1\frac{3}{8} \times 2 = 1\frac{6}{16}$   $1\frac{9}{16}$   $1\frac{1}{4} \times 4 = 1\frac{4}{16}$

$1\frac{3}{8}$   $1\frac{1}{4}$   $1\frac{9}{16}$



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Answers:

### Activity 3:

Re-arrange the following mixed numbers in order from smallest to greatest.

a)

$1\frac{1}{2}$

$1\frac{3}{4}$

$1\frac{7}{8}$

b)

$1\frac{7}{12}$

$1\frac{2}{3}$

$1\frac{3}{4}$

c)

$1\frac{11}{16}$

$1\frac{3}{4}$

$1\frac{7}{8}$

d)

$1\frac{3}{5}$

$1\frac{17}{20}$

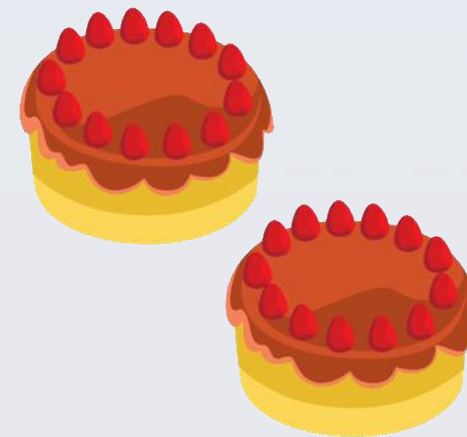
$1\frac{9}{10}$

$1\frac{3}{8}$ $\times 2$	$1\frac{9}{16}$	$1\frac{1}{4}$ $\times 4$
$1\frac{6}{16}$	$1\frac{9}{16}$	$1\frac{4}{16}$
$1\frac{3}{8}$	$1\frac{1}{4}$	$1\frac{9}{16}$

Problem Solving: Draw bar models to help visualise the problem.



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### Activity 4:

Ruth and Yasmin have two of the same cakes each.

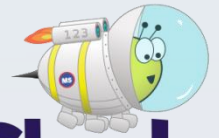
Ruth says, “I have cut both of my cakes into ten equal slices and sold thirteen slices.”

Yasmin says, “I have cut both of my cakes into five equal slices and sold nine slices.”

Who has sold the most cake?

Explain your answer.

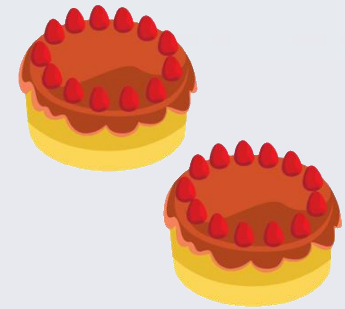
Answers: <https://www.loom.com/share/78167b37400c43709fc01457db75af08>



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## Activity 4:

Ruth and Yasmin have two of the same cakes each.



Ruth says, “I have cut both of my cakes into ten equal slices and sold thirteen slices.”

Yasmin says, “I have cut both of my cakes into five equal slices and sold nine slices.”

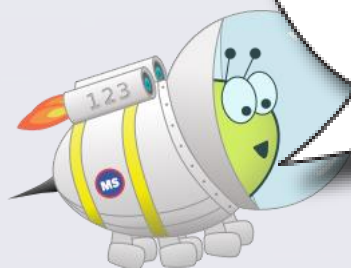
Yasmin has sold the most cake as  $\frac{18}{10}$  is greater than  $\frac{13}{10}$ .

Reasoning: Make sure you explain your answers in full sentences, trying your best to use the correct mathematical vocabulary.



**Evaluation:**

$1\frac{1}{2}$  is smaller than  $1\frac{3}{10}$  because the numerator and denominator in the first fraction are smaller.



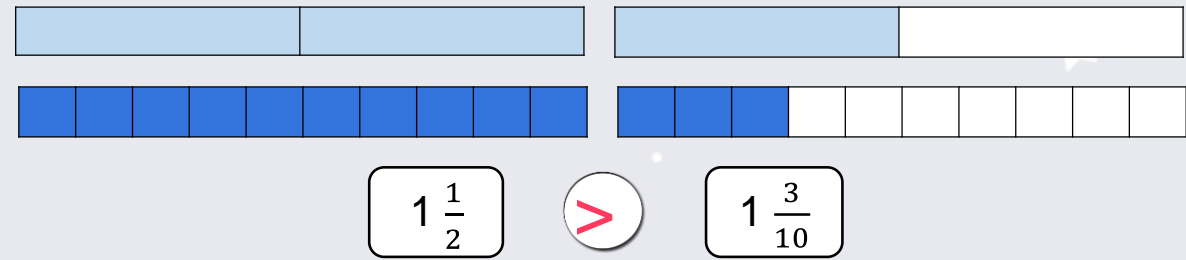
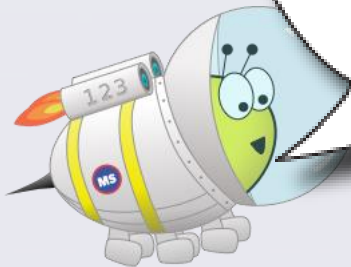
Do you agree?

Provide bar models to explain your answer.

Answers:

Evaluation:

$1\frac{1}{2}$  is smaller than  $1\frac{3}{10}$  because the numerator and denominator in the first fraction are smaller.



No, I do not agree.

A half is equivalent to five tenths. Both mixed numbers have one whole and therefore 1 as an integer. Once converted, it is clear that half is a greater fraction than three tenths, as the bar models show.