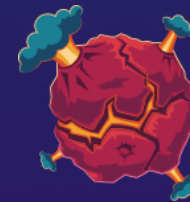


MathShed

Lesson 5: To be able to compare and order fractions





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To be able to compare and order fractions

Success criteria:

- ✓ I can apply my equivalent fractions knowledge by comparing and ordering fractions less than 1 that have common multiple denominators
- ✓ I can explain my reasoning when applying my equivalent fractions knowledge by comparing and ordering fractions less than 1 that have common multiple denominators

Click the link to watch my think aloud.

<https://www.loom.com/share/cfe2c8cd3d63485dbcda8f46760c4ecb>

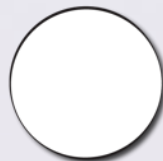


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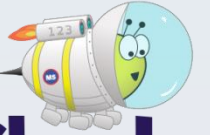
Talking Time:

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

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



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

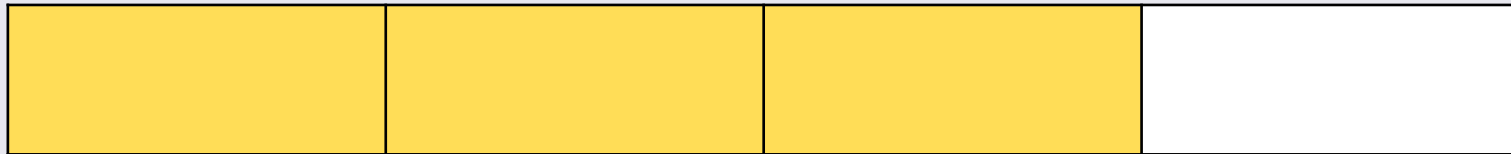
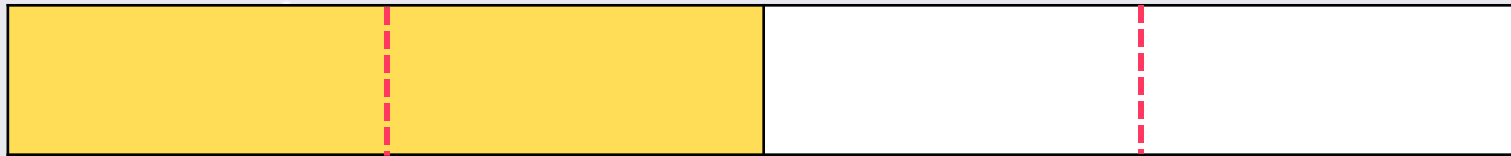


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Answers:

Talking Time:

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



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



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

Watch this think aloud too.

<https://www.loom.com/share/d805054613bc4775802ac36685fbdae6> ★



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Talking Time:

Use the bar models below to compare $\frac{2}{3}$ and $\frac{5}{6}$.

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



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

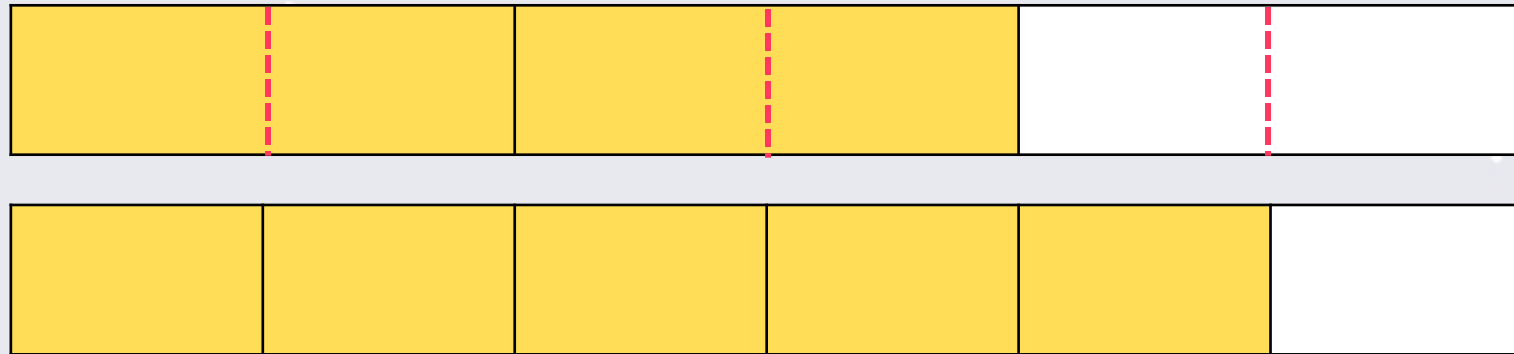


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Answers:

Talking Time:

Use the bar models below to compare $\frac{2}{3}$ and $\frac{5}{6}$.



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



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

One last think aloud.

<https://www.loom.com/share/1158954b67da41c9b3baf63a56b17508>

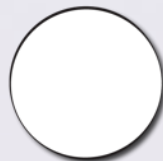


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Talking Time:

Use the bar models below to compare $\frac{1}{3}$ and $\frac{2}{9}$.

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



$$\frac{2}{9}$$

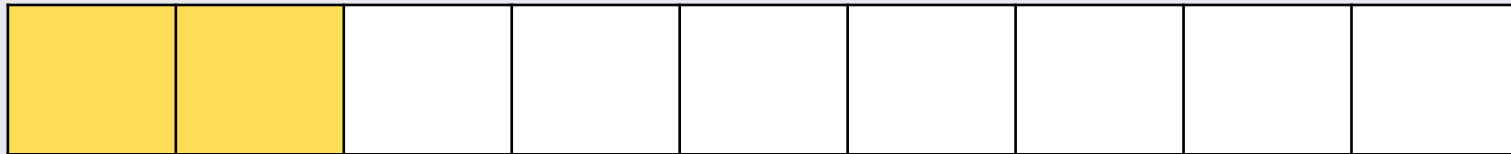


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Answers:

Talking Time:

Use the bar models below to compare $\frac{1}{3}$ and $\frac{2}{9}$.



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



$$\frac{2}{9}$$



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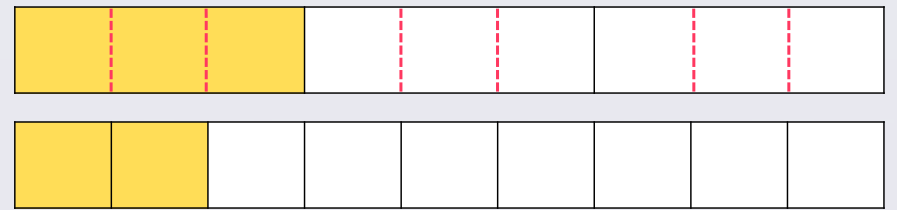
Have a go at solving these on your own.

Use bar models to compare the following:

a) $\frac{3}{4}$ ○ $\frac{5}{8}$

b) $\frac{2}{3}$ ○ $\frac{5}{12}$

c) $\frac{3}{5}$ ○ $\frac{7}{10}$



$\frac{1}{3}$



$\frac{2}{9}$



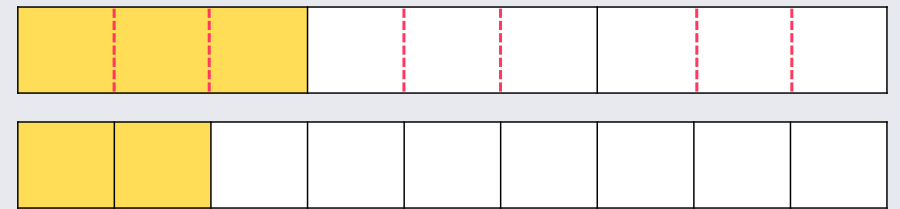
Answers:

Use bar models to compare the following:

a) $\frac{3}{4}$ $>$ $\frac{5}{8}$

b) $\frac{2}{3}$ $>$ $\frac{5}{12}$

c) $\frac{3}{5}$ $<$ $\frac{7}{10}$



$\frac{1}{3}$ $>$ $\frac{2}{9}$

Think aloud -

<https://www.loom.com/share/effe7ac27a53471c8a40b4338c7b4fc8>

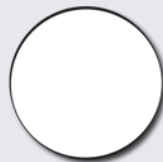


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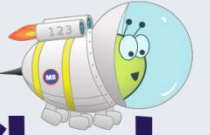
Talking Time:

Use the bar models below to compare common numerator fractions: $\frac{1}{2}$ and $\frac{1}{3}$.

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



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

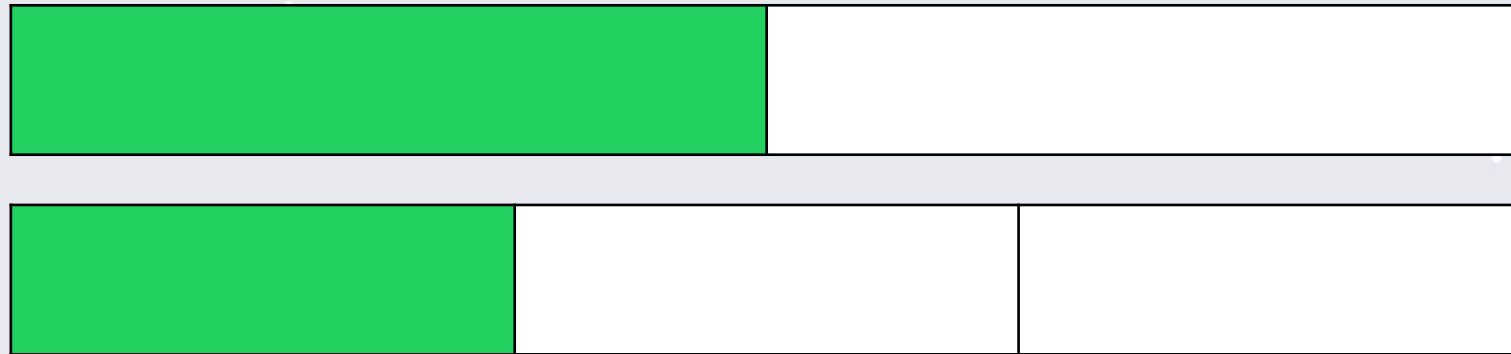


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Answers:

Talking Time:

Use the bar models below to compare common numerator fractions: $\frac{1}{2}$ and $\frac{1}{3}$.



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



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

Think aloud -

<https://www.loom.com/share/bf2a2b3b857c457aa8fd57a282247a9c>

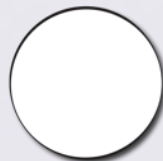


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Talking Time:

Use the bar models below to compare common numerator fractions: $\frac{2}{5}$ and $\frac{2}{3}$.

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



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



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Answers:

Talking Time:

Use the bar models below to compare common numerator fractions: $\frac{2}{5}$ and $\frac{2}{3}$.



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



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

One last think aloud.

<https://www.loom.com/share/8e382366f82f41078f2b48e4cdc168ff>

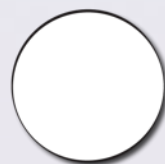


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Talking Time:

Use the bar models below to compare common numerator fractions: $\frac{3}{10}$ and $\frac{3}{7}$.

$$\frac{3}{10}$$

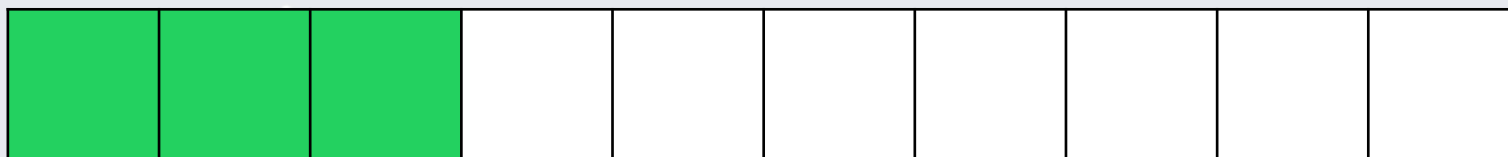


$$\frac{3}{7}$$

Answers:

Talking Time:

Use the bar models below to compare common numerator fractions: $\frac{3}{10}$ and $\frac{3}{7}$.



$$\frac{3}{10}$$

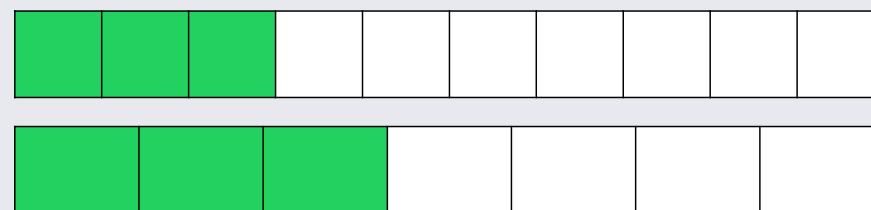


$$\frac{3}{7}$$

Now try to solve these on your own. You may want to draw bar models to help you.

Use bar models to compare the following common numerator fractions:

a) $\frac{3}{4}$ ○ $\frac{3}{5}$



b) $\frac{4}{7}$ ○ $\frac{4}{5}$

$\frac{3}{10}$ < $\frac{3}{7}$

c) $\frac{5}{12}$ ○ $\frac{5}{9}$

Extension:
Have you discovered a rule?

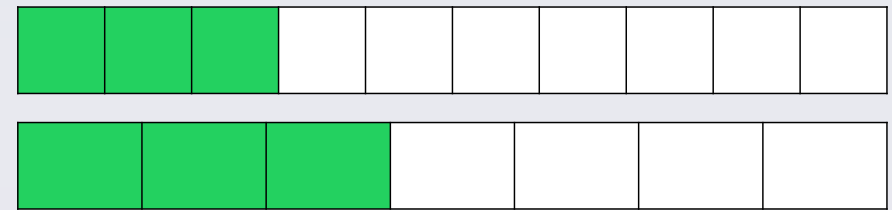


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Answers:

Use bar models to compare the following common numerator fractions:

a) $\frac{3}{4}$ $>$ $\frac{3}{5}$



b) $\frac{4}{7}$ $<$ $\frac{4}{5}$

$\frac{3}{10}$ $<$ $\frac{3}{7}$

c) $\frac{5}{12}$ $<$ $\frac{5}{9}$

If the numerators are the same, then the fraction with the smaller denominator is greater!

Using the rule from the slide before solve this problem.
You shouldn't need to draw any models.



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

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

$$\frac{3}{7}$$

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

Answers:

Talking Time:

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

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

$$\frac{3}{7}$$

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

$$\frac{3}{7}$$

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

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

Try this one on your own too.

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

$$\frac{7}{11}$$

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

$$\frac{7}{12}$$

Answers:

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

$$\frac{7}{11}$$

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

$$\frac{7}{12}$$

$$\frac{7}{12}$$

$$\frac{7}{11}$$

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

Think aloud -

<https://www.loom.com/share/56c2cb70b3a54b73bc8fd90b626ffcbf>



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

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

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

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

Answers:

Talking Time:

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

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

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

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

$$\frac{4}{12}$$

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

$$\frac{10}{12}$$



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Solve this problem on your own. First you need to decide if you are altering the numerator or denominator.

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

$$\frac{2}{7}$$

$$\frac{4}{11}$$

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

Answers:

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

$$\frac{2}{7}$$

$$\frac{4}{11}$$

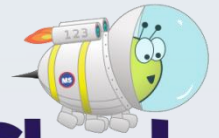
$$\frac{1}{3}$$

$$\frac{4}{14}$$

$$\frac{4}{11}$$

$$\frac{4}{12}$$

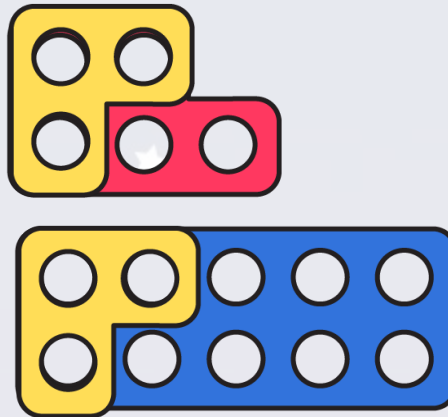
The easiest option would have been to change all of the numerators to be the same. We know that this makes it very easy to compare fractions.



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Activity 4:

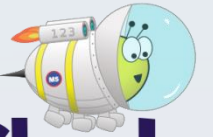
Ruth makes $\frac{3}{5}$ and $\frac{3}{10}$ using Numicon Shapes.



She says, “ $\frac{3}{5}$ is equal to $\frac{3}{10}$.”

Do you agree?

Explain your answer by using a different representation.

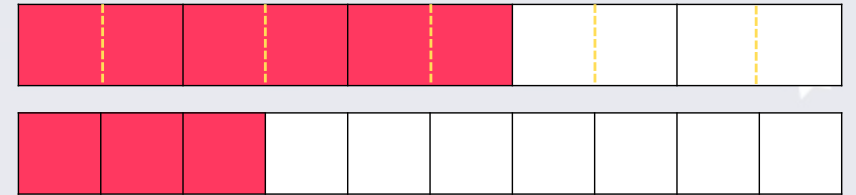
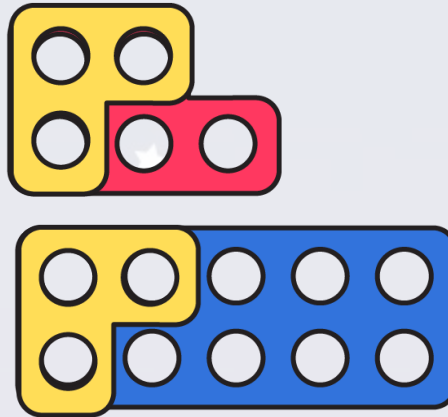


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Answers:

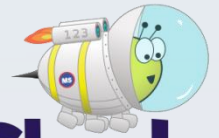
Activity 4:

Ruth makes $\frac{3}{5}$ and $\frac{3}{10}$ using Numicon Shapes.



No, I do not agree.

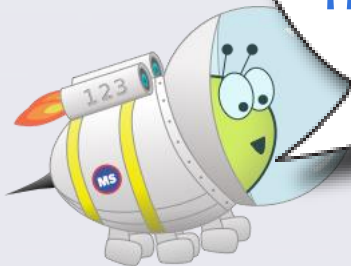
Numicon Shapes are not the best equipment for choosing to compare fractions, bar models are far more effective as they ensure that you are comparing equally-sized bars that are split by different denominators and shaded in according to their numerators (as shown above). So, $\frac{3}{5}$ is greater than $\frac{3}{10}$



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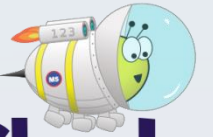
Evaluation:

If a number shares the same denominator, the fraction with the smaller numerator is greater.



Is Astrobee's statement always, sometimes or never true?

Provide examples to explain your answer.

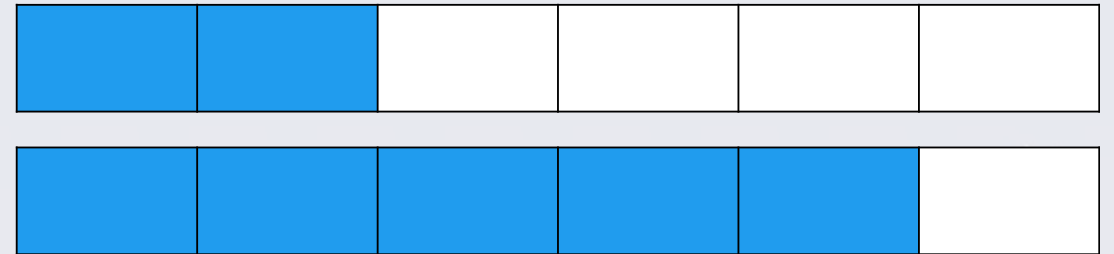
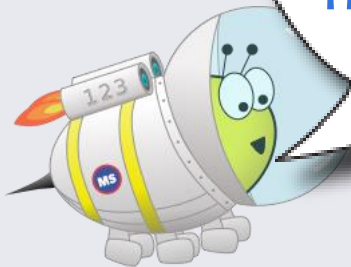


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Answers:

Evaluation:

If a number shares the same denominator, the fraction with the smaller numerator is greater.



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



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

Astrobee's statement is never true. If two fractions share the same denominator, the fraction with the smaller numerator is never the greater fraction, as demonstrated by the number sentence and bar models above.