Lesson 2 – Improper to Mixed Numbers

NC Objective:
Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number [for example 2/5 + 4/5 = 6/5 = 1 1/5]

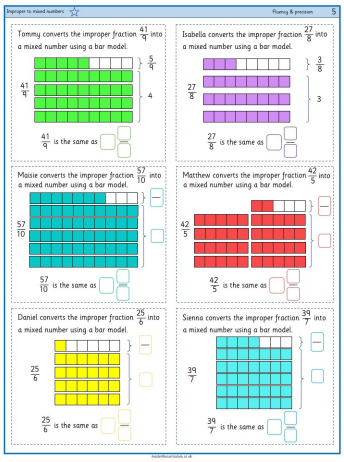
Resources needed:
Differentiated Sheets
Teaching Slides

Vocabulary:
Improper fractions, mixed numbers, convert, numerator, denominator, represent

Children convert improper fractions to mixed numbers for the first time. An improper fraction is a fraction where the numerator is greater than the denominator. A mixed number is a number consisting of an integer and a proper fraction. It is important for children to see this process represented visually to allow them to make the connections between the concept and what happens in the abstract.

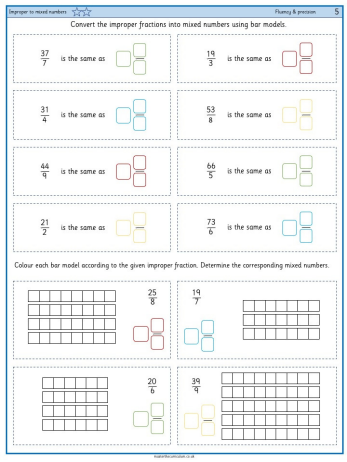
Key Questions:
How many parts are there in a whole?
What do you notice happens to the mixed number when the denominator increases and the numerator remains the same?
What happens when the numerator is a multiple of the denominator?

★ Working Towards



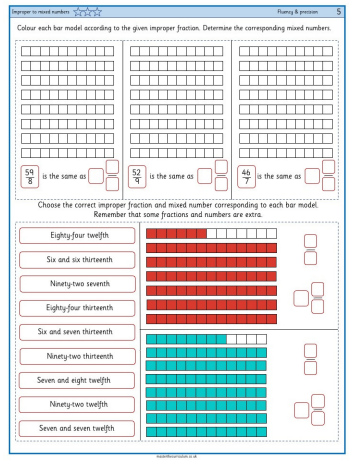
On this sheet, they will use a completed bar model that represents improper fractions as a mixed number.

★★ Working Within



On this sheet, they will have an abstract fraction and are to draw a bar model themselves that represents the improper fractions as a mixed number.

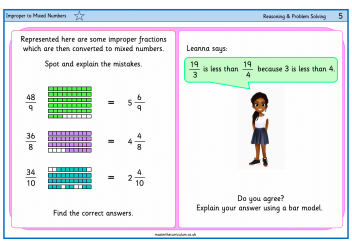
★★★ Greater Depth

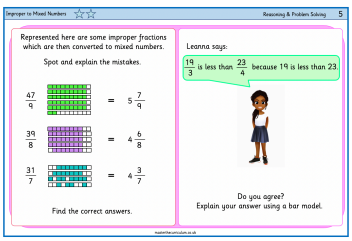


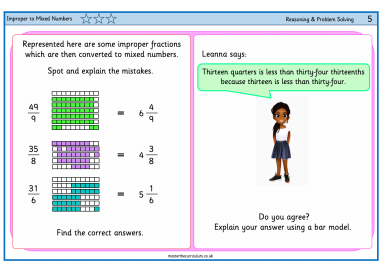
On this sheet, children show their understanding by colouring a bar model and choosing the correct amount of bars to colour in.

They identify improper fractions written in words.

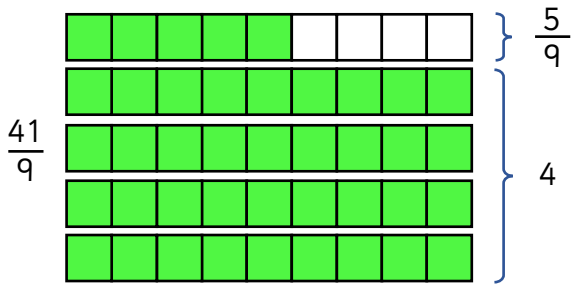
Reasoning & Problem Solving





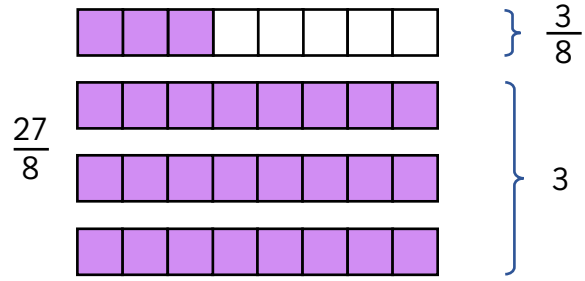


Tommy converts the improper fraction $\frac{41}{9}$ into a mixed number using a bar model.



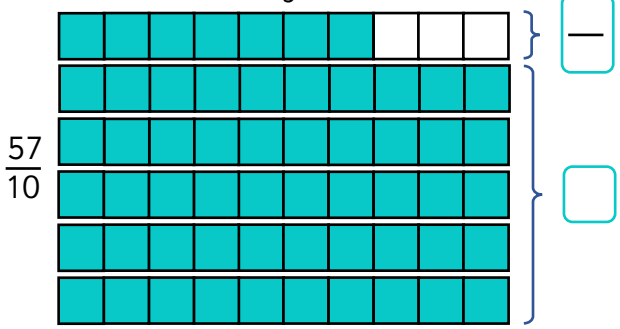
$\frac{41}{9}$ is the same as ☐ ☐/☐

Isabella converts the improper fraction $\frac{27}{8}$ into a mixed number using a bar model.



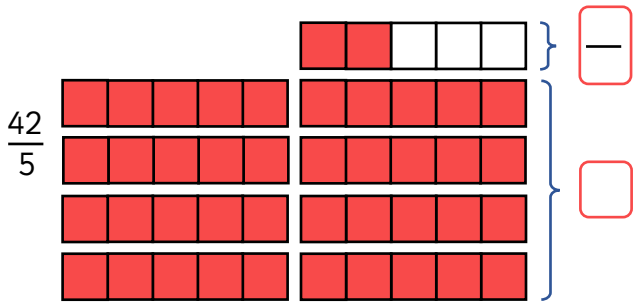
$\frac{27}{8}$ is the same as ☐ ☐/☐

Maisie converts the improper fraction $\frac{57}{10}$ into a mixed number using a bar model.



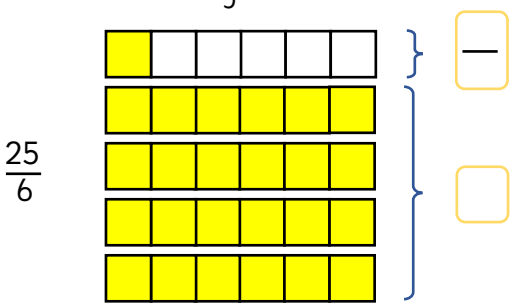
$\frac{57}{10}$ is the same as ☐ ☐/☐

Matthew converts the improper fraction $\frac{42}{5}$ into a mixed number using a bar model.



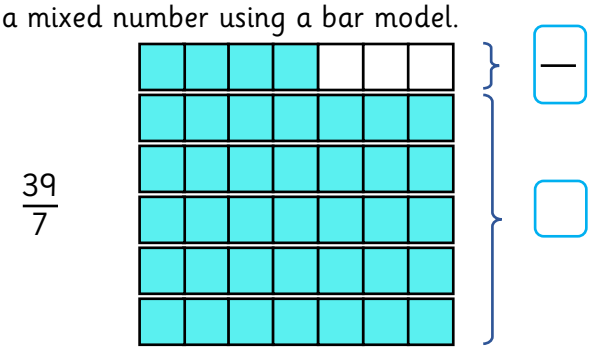
$\frac{42}{5}$ is the same as ☐ ☐/☐

Daniel converts the improper fraction $\frac{25}{6}$ into a mixed number using a bar model.



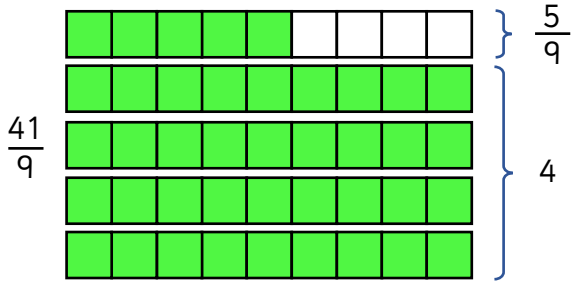
$\frac{25}{6}$ is the same as ☐ ☐/☐

Sienna converts the improper fraction $\frac{39}{7}$ into a mixed number using a bar model.



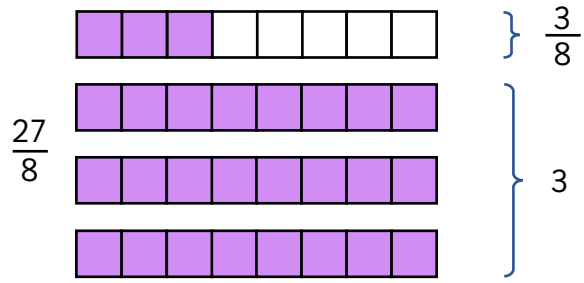
$\frac{39}{7}$ is the same as ☐ ☐/☐

Tommy converts the improper fraction $\frac{41}{9}$ into a mixed number using a bar model.



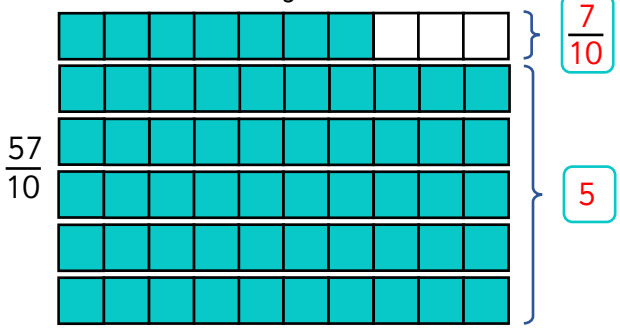
$\frac{41}{9}$ is the same as 4 $\frac{5}{9}$

Isabella converts the improper fraction $\frac{27}{8}$ into a mixed number using a bar model.



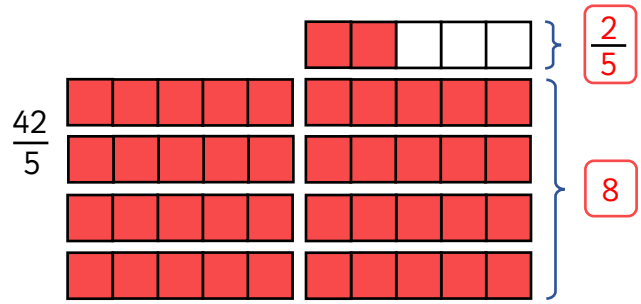
$\frac{27}{8}$ is the same as 3 $\frac{3}{8}$

Maisie converts the improper fraction $\frac{57}{10}$ into a mixed number using a bar model.



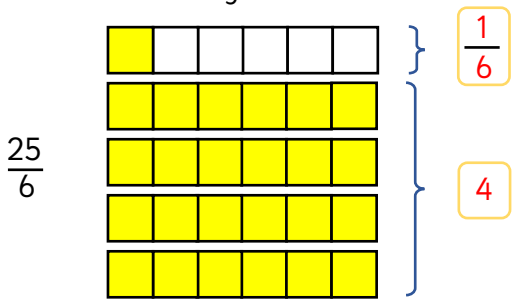
$\frac{57}{10}$ is the same as 5 $\frac{7}{10}$

Matthew converts the improper fraction $\frac{42}{5}$ into a mixed number using a bar model.



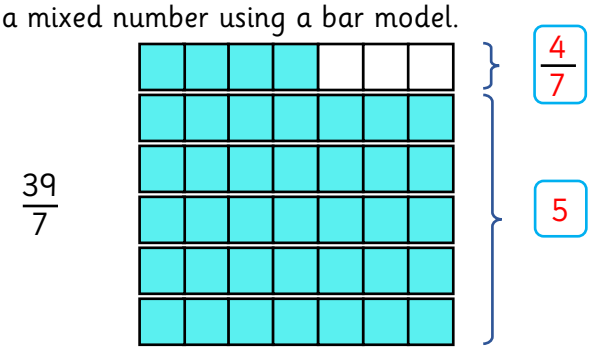
$\frac{42}{5}$ is the same as 8 $\frac{2}{5}$

Daniel converts the improper fraction $\frac{25}{6}$ into a mixed number using a bar model.



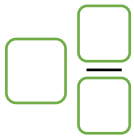
$\frac{25}{6}$ is the same as 4 $\frac{1}{6}$

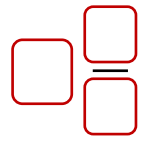
Sienna converts the improper fraction $\frac{39}{7}$ into a mixed number using a bar model.

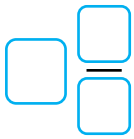


$\frac{39}{7}$ is the same as 5 $\frac{4}{7}$

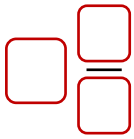
Convert the improper fractions into mixed numbers using bar models.

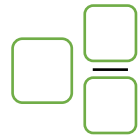
$\frac{37}{7}$ is the same as 

$\frac{19}{3}$ is the same as 

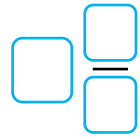
$\frac{31}{4}$ is the same as 

$\frac{53}{8}$ is the same as

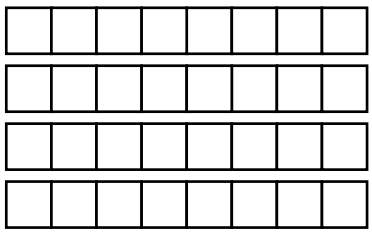
$\frac{44}{9}$ is the same as 

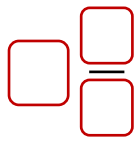
$\frac{66}{5}$ is the same as 

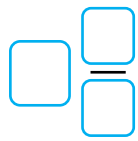
$\frac{21}{2}$ is the same as

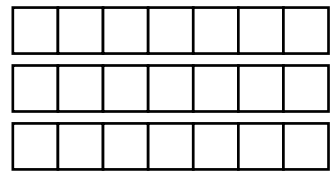
$\frac{73}{6}$ is the same as 

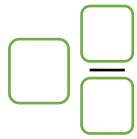
Colour each bar model according to the given improper fraction. Determine the corresponding mixed numbers.



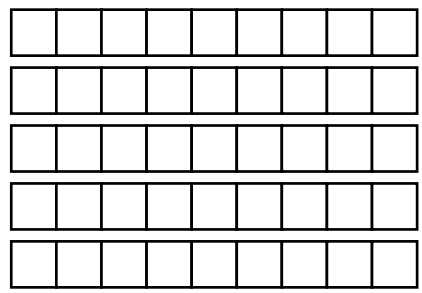
$\frac{25}{8}$ 

$\frac{19}{7}$ 



$\frac{20}{6}$ 

$\frac{39}{9}$



Convert the improper fractions into mixed numbers using bar models.

$\frac{37}{7}$ is the same as $5\frac{2}{7}$

$\frac{19}{3}$ is the same as $6\frac{1}{3}$

$\frac{31}{4}$ is the same as $7\frac{3}{4}$

$\frac{53}{8}$ is the same as $6\frac{5}{8}$

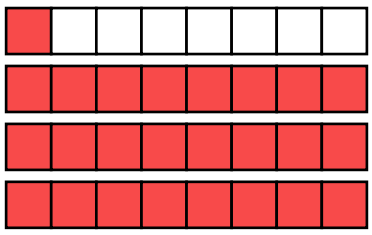
$\frac{44}{9}$ is the same as $4\frac{8}{9}$

$\frac{66}{5}$ is the same as $13\frac{1}{5}$

$\frac{21}{2}$ is the same as $10\frac{1}{2}$

$\frac{73}{6}$ is the same as $12\frac{1}{6}$

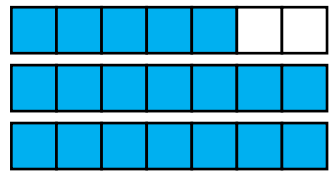
Colour each bar model according to the given improper fraction. Determine the corresponding mixed numbers.



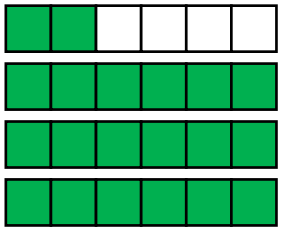
$\frac{25}{8}$

$3\frac{1}{8}$

$\frac{19}{7}$



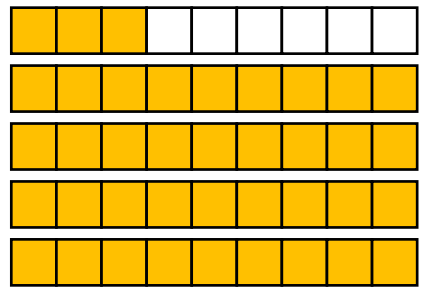
$2\frac{5}{7}$



$\frac{20}{6}$

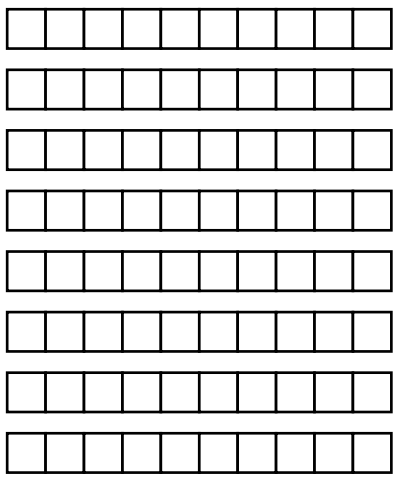
$3\frac{2}{6}$

$\frac{39}{9}$

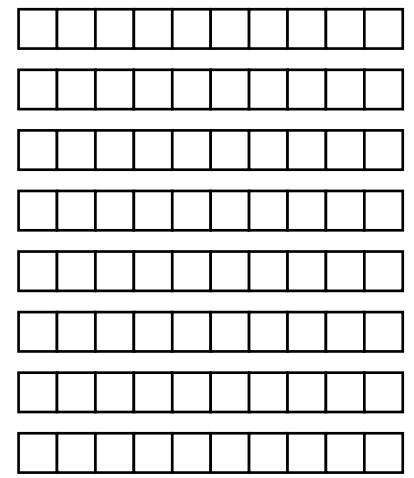


$4\frac{3}{9}$

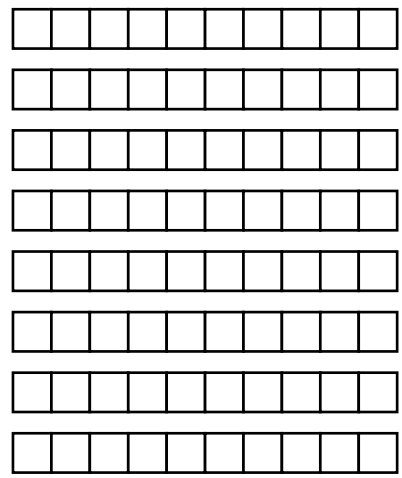
Colour each bar model according to the given improper fraction. Determine the corresponding mixed numbers.



$\frac{59}{8}$ is the same as ☐ ☐/☐



$\frac{52}{9}$ is the same as ☐ ☐/☐



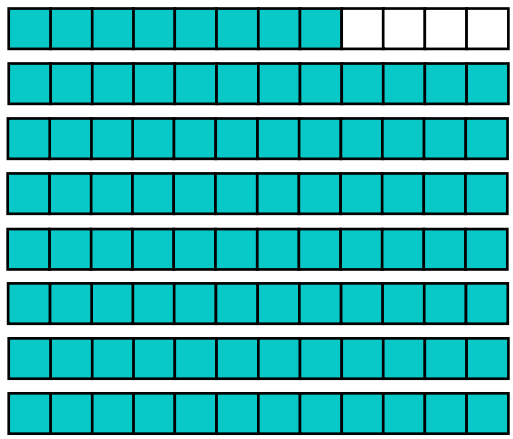
$\frac{46}{7}$ is the same as ☐ ☐/☐

Choose the correct improper fraction and mixed number corresponding to each bar model.
Remember that some fractions and numbers are extra.

- Eighty-four twelfths
- Six and six thirteenths
- Ninety-two sevenths
- Eighty-four thirteenths
- Six and seven thirteenths
- Ninety-two thirteenths
- Seven and eight twelfths
- Ninety-two twelfths
- Seven and seven twelfths

☐/☐

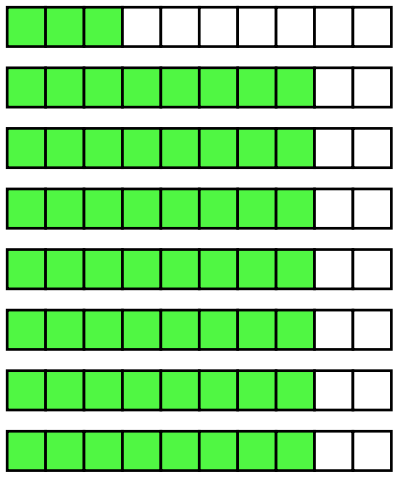
☐ ☐/☐



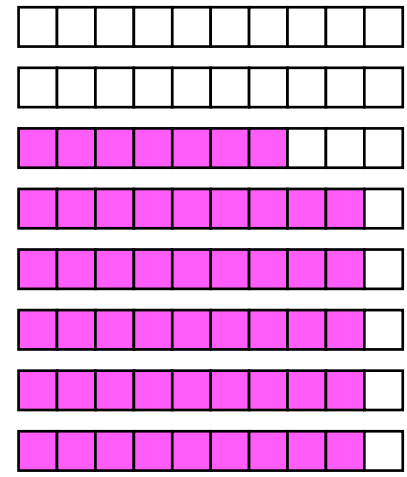
☐/☐

☐ ☐/☐

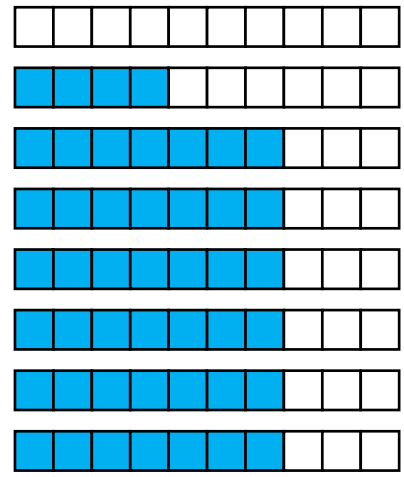
Colour each bar model according to the given improper fraction. Determine the corresponding mixed numbers.



$\frac{59}{8}$ is the same as $7\frac{3}{8}$



$\frac{52}{9}$ is the same as $5\frac{7}{9}$



$\frac{46}{7}$ is the same as $6\frac{4}{7}$

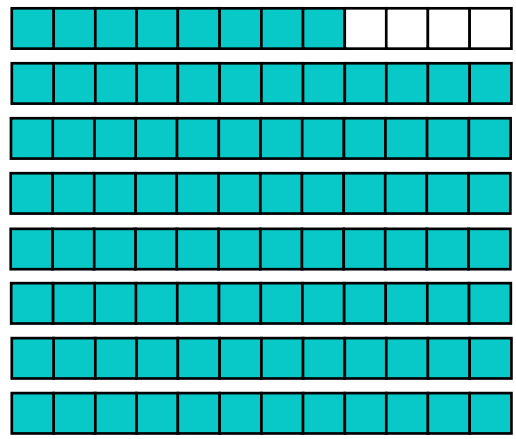
Choose the correct improper fraction and mixed number corresponding to each bar model.
Remember that some and numbers are extra.

Eighty-four thirteenths

$\frac{84}{13}$

Six and six thirteenths

$6\frac{6}{13}$



$\frac{92}{12}$

Ninety-two twelfths

$7\frac{8}{12}$

Seven and eight twelfths

Extra numbers

Seven and seven twelfths

Eighty-four twelfths

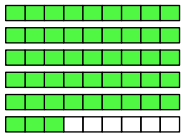
Six and seven thirteenths

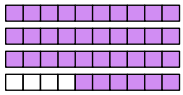
Ninety-two sevenths

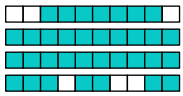
Ninety-two thirteenths

Represented here are some improper fractions which are then converted to mixed numbers.

Spot and explain the mistakes.

$\frac{48}{9}$  $= 5\frac{6}{9}$

$\frac{36}{8}$  $= 4\frac{4}{8}$

$\frac{34}{10}$  $= 2\frac{4}{10}$

Find the correct answers.

Leanna says:

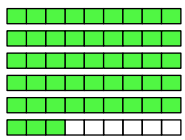
$\frac{19}{3}$ is less than $\frac{19}{4}$ because 3 is less than 4.

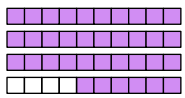
Do you agree?
Explain your answer using a bar model.

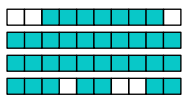
Improper to Mixed Numbers ☆ Reasoning & Problem Solving 5

Represented here are some improper fractions which are then converted to mixed numbers.

Spot and explain the mistakes.

$\frac{48}{9}$  $= 5\frac{6}{9}$

$\frac{36}{8}$  $= 4\frac{4}{8}$

$\frac{34}{10}$  $= 2\frac{4}{10}$

Find the correct answers.

Leanna says:

$\frac{19}{3}$ is less than $\frac{19}{4}$ because 3 is less than 4.

Do you agree?
Explain your answer using a bar model.

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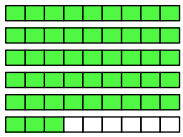
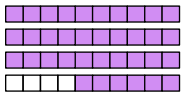
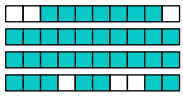
Represented here are some improper fractions which are then converted to mixed numbers.

Spot and explain the mistakes.

$\frac{48}{9}$  $= 5\frac{6}{9}$

$\frac{36}{8}$  $= 4\frac{4}{8}$

$\frac{34}{10}$  $= 2\frac{4}{10}$

Find the correct answers.

Correct answers:

- $5\frac{3}{9}$ (incorrect numerator)
- Incorrect bar model
- $3\frac{4}{10}$ (incorrect whole and bar model)

Leanna says:

$\frac{19}{3}$ is less than $\frac{19}{4}$ because 3 is less than 4.

Do you agree?
Explain your answer using a bar model.

Leanna is incorrect.

$\frac{19}{3} = 6\frac{1}{3}$ is greater than $\frac{19}{4} = 4\frac{3}{4}$

Improper to Mixed Numbers ☆ Answers Reasoning & Problem Solving 5

Represented here are some improper fractions which are then converted to mixed numbers.

Spot and explain the mistakes.

$\frac{48}{9}$ $= 5\frac{6}{9}$

$\frac{36}{8}$ $= 4\frac{4}{8}$

$\frac{34}{10}$ $= 2\frac{4}{10}$

Find the correct answers.

Correct answers:

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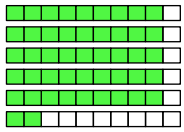
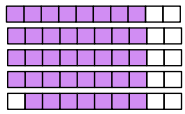
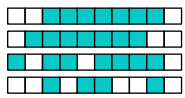
Spot and explain the mistakes.

$\frac{47}{9}$  $= 5\frac{7}{9}$

$\frac{39}{8}$  $= 4\frac{6}{8}$

$\frac{31}{7}$  $= 4\frac{3}{7}$

Find the correct answers.

Leanna says:

$\frac{19}{3}$ is less than $\frac{23}{4}$ because 19 is less than 23.

Do you agree?
Explain your answer using a bar model.

Improper to Mixed Numbers ☆☆ Reasoning & Problem Solving 5

Represented here are some improper fractions which are then converted to mixed numbers.

Spot and explain the mistakes.

$\frac{47}{9}$ $= 5\frac{7}{9}$

$\frac{39}{8}$ $= 4\frac{6}{8}$

$\frac{31}{7}$ $= 4\frac{3}{7}$

Find the correct answers.

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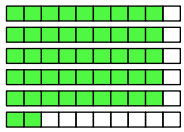
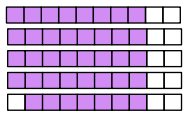
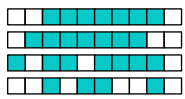
$\frac{47}{9}$  $= 5\frac{7}{9}$

$\frac{39}{8}$  $= 4\frac{6}{8}$

$\frac{31}{7}$  $= 4\frac{3}{7}$

Find the correct answers.

Correct answers:

- $5\frac{2}{9}$ (incorrect numerator)
- $4\frac{7}{8}$ (incorrect numerator)
- The bar model is incorrect

Leanna says:

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Improper to Mixed Numbers ☆☆ Answers Reasoning & Problem Solving 5

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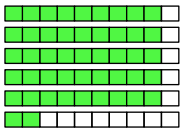
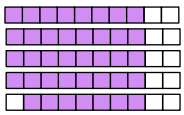
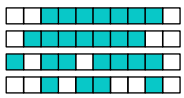
$\frac{47}{9}$  $= 5\frac{7}{9}$

$\frac{39}{8}$  $= 4\frac{6}{8}$

$\frac{31}{7}$  $= 4\frac{3}{7}$

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Correct answers:

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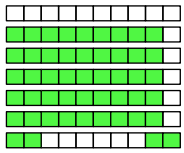
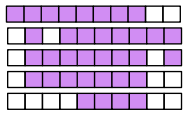
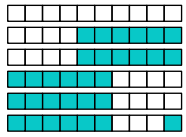
$\frac{49}{9}$  $= 6\frac{4}{9}$

$\frac{35}{8}$  $= 4\frac{3}{8}$

$\frac{31}{6}$  $= 5\frac{1}{6}$

Find the correct answers.

Leanna says:

Thirteen quarters is less than thirty-four thirteenths because thirteen is less than thirty-four.

Do you agree?
Explain your answer using a bar model.

Improper to Mixed Numbers ☆☆☆ Reasoning & Problem Solving 5

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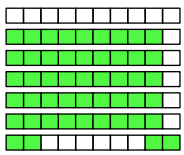
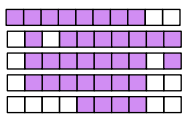
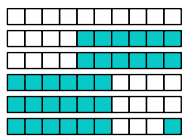
Spot and explain the mistakes.

$\frac{49}{9}$  $= 6\frac{4}{9}$

$\frac{35}{8}$  $= 4\frac{3}{8}$

$\frac{31}{6}$  $= 5\frac{1}{6}$

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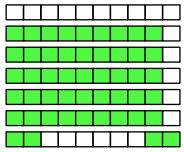
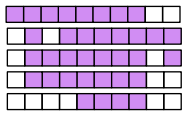
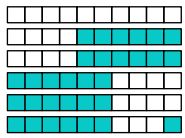
$\frac{49}{9}$  $= 6\frac{4}{9}$

$\frac{35}{8}$  $= 4\frac{3}{8}$

$\frac{31}{6}$  $= 5\frac{1}{6}$

Find the correct answers.

Correct answers:

- $5\frac{4}{9}$ (incorrect whole)
- The bar model is incorrect
- The bar model is incorrect

Leanna says:

Thirteen quarters is less than thirty-four thirteenths because thirteen is less than thirty-four.

Do you agree?

Explain your answer using a bar model.

Leanna is incorrect.

$\frac{13}{4} = 3\frac{1}{4}$ is greater than $\frac{34}{13} = 2\frac{8}{13}$

Improper to Mixed Numbers ☆☆☆ Answers Reasoning & Problem Solving 5

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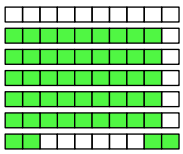
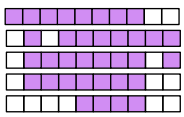
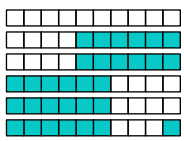
$\frac{49}{9}$  $= 6\frac{4}{9}$

$\frac{35}{8}$  $= 4\frac{3}{8}$

$\frac{31}{6}$  $= 5\frac{1}{6}$

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