Reasoning and Problem Solving
Step 3: Mixed Numbers to Improper Fractions

National Curriculum Objectives:

Mathematics Year 5: (5F2a) 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]

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing Use the clues to find the missing digits for the mixed number and improper fraction. Includes quarters and tenths with pictorial representations.
Expected Use the clues to find the missing digits for the mixed number and improper fraction. Includes fractions up to twelfths with pictorial representations.
Greater Depth Use the clues to find the missing digits for the mixed number and improper fraction. Includes fractions up to twelfths.

Questions 2, 5 and 8 (Reasoning)
Developing Identify whether a statement is correct or incorrect and explain why. Include thirds and fifths with pictorial representations.
Expected Identify whether a statement is correct or incorrect and explain why. Includes fractions up to twelfths with pictorial representations.
Greater Depth Identify whether a statement is correct or incorrect and explain why. Includes fractions up to twelfths and incomplete pictorial representations.

Questions 3, 6 and 9 (Problem solving)
Developing Follow clues to identify a mixed number to convert to an improper fraction. Includes halves and tenths.
Expected Follow clues to identify a mixed number to convert to an improper fraction. Includes fractions up to twelfths.
Greater Depth Follow clues to identify a mixed number to convert to an improper fraction. Find multiple possibilities.

More Year 5 Fractions resources.

Did you like this resource? Don't forget to review it on our website.

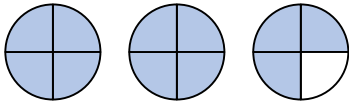**classroomsecrets.co.uk**

Mixed Numbers to Improper Fractions

Mixed Numbers to Improper Fractions

1a. Use the clues to find the missing digits.

An odd number.

Both digits are the same number.

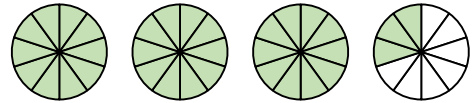$$2\,\frac{\boxed{}}{4} = \frac{\boxed{}\,\boxed{}}{\boxed{}}$$

PS

1b. Use the clues to find the missing digits.

A multiple of 3.

Both digits are the same number.

$$3\,\frac{\boxed{}}{10} = \frac{\boxed{}\,\boxed{}}{\boxed{}}$$
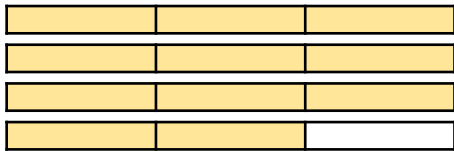
PS

2a. Frankie says,

$3\frac{2}{3}$ as an improper fraction is $\frac{9}{3}$.

Do you agree with Frankie?
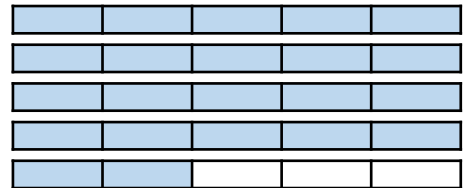Explain your answer.

R

2b. Dan says,

$4\frac{2}{5}$ as an improper fraction is $\frac{13}{5}$.

Do you agree with Dan?
Explain your answer.

R

3a. Jason has a mixed number.

A. It includes 2 wholes.

B. The denominator is 2 x 5.

C. The numerator is an even number less than 5.

What could Jason's fraction be when it is converted to an improper fraction?

Find one possibility.

PS

3b. Shana has a mixed number.

A. It includes 3 wholes.

B. The denominator is an half of 4.

C. The numerator is an odd number that is less than the denominator.

What could Shana's fraction be when it is converted to an improper fraction?

Find one possibility.

PS

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Reasoning and Problem Solving – Mixed Numbers to Improper Fractions – Year 5 Developing
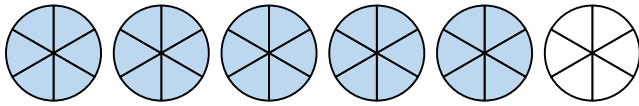
Mixed Numbers to Improper Fractions

Mixed Numbers to Improper Fractions

4a. Use the clues to find the missing digits.

| A factor of 8. | These 2 digits add together to make 5. |

$$5 \frac{\Box}{6} = \frac{\Box \Box}{\Box}$$
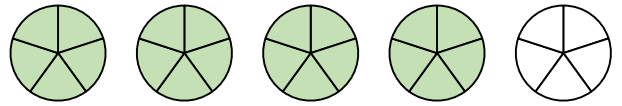
Show your working and complete the image.

E   PS

4b. Use the clues to find the missing digits.

| A square number. | One digit is twice as much as the other digit. |

$$4 \frac{\Box}{5} = \frac{\Box \Box}{\Box}$$

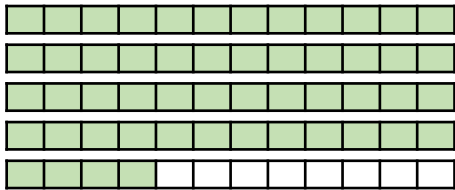Show your working and complete the image.

E   PS

5a. Lucille says,

$4\frac{4}{12}$ as an improper fraction is $\frac{48}{12}$.
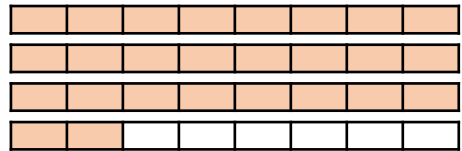
Do you agree with Lucille?
Explain your answer.

E   R

5b. Karl says,

$3\frac{2}{8}$ as an improper fraction is $\frac{26}{8}$.

Do you agree with Karl?
Explain your answer.

E   R

6a. Oscar has a mixed number.

A. It includes 3 wholes.

B. The denominator is 3 x 4

C. The numerator is a prime number between 5 and 10.

What could Oscar's fraction be when it is converted to an improper fraction?

Find one possibility.

E   PS

6b. Ivan has a mixed number.

A. It includes 4 wholes.

B. The denominator has a digit sum of 2.

C. The numerator is a even number between 3 and 7.

What could Ivan's fraction be when it is converted to an improper fraction?

Find one possibility.

E   PS

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Reasoning and Problem Solving – Mixed Numbers to Improper Fractions – Year 5 Expected

7a. Use the clues to find the missing digits.

An odd number.

These digits add together to make 9.

$$6 \frac{\square}{12} = \frac{\square\square}{4}$$

Show your working.

GD

PS

7b. Use the clues to find the missing digits.

The numerator is a factor of the denominator.

These digits have a difference of 7.

$$7 \frac{\square}{8} = \frac{\square\square}{4}$$

Show your working.

GD

PS

8a. Sue says,

$3\frac{6}{11}$ as an improper fraction is $\frac{39}{11}$.

Do you agree with Sue?
Explain your answer.

GD

R

8b. Simon says,

$4\frac{2}{9}$ as an improper fraction is $\frac{28}{9}$.

Do you agree with Simon?
Explain your answer.

GD

R

9a. Atifa has a mixed number.

A. It includes 5 wholes.

B. The denominator is less than 12 but more than 4.

C. The numerator is half the denominator.

What could Atifa's fraction be when it is converted to an improper fraction?

List all the possibilities.

GD

PS

9b. Vicky has a mixed number.

A. It includes 3 wholes.

B. The denominator is less than 15 and has a digit sum of 3.

C. The numerator is a third of the denominator.

What could Vicky's fraction be when it is converted to an improper fraction?

List all the possibilities.

GD

PS

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Reasoning and Problem Solving – Mixed Numbers to Improper Fractions – Year 5 Greater Depth

Reasoning and Problem Solving
Mixed Numbers to Improper Fractions

Developing

1a. $2\frac{3}{4} = \frac{11}{4}$

2a. Frankie is incorrect; $3\frac{2}{3} = \frac{11}{3}$.

3a. $\frac{22}{10}$ or $\frac{24}{10}$

Developing

1b. $3\frac{3}{10} = \frac{33}{10}$

2b. Dan is incorrect; $4\frac{2}{5} = \frac{22}{5}$.

3b. $\frac{7}{2}$

Expected

4a. $5\frac{2}{6} = \frac{32}{6}$

5a. Lucille is incorrect; $4\frac{4}{12} = \frac{52}{12}$.

6a. $\frac{43}{12}$

Expected

4b. $4\frac{4}{5} = \frac{24}{5}$

5b. Karl is correct. 3 x 8 = 24 and 24 + 2 = 26 so $3\frac{2}{8} = \frac{26}{8}$.

6b. $\frac{48}{11}$ or $\frac{50}{11}$

Greater Depth

7a. $6\frac{9}{12} = \frac{27}{4}$

8a. Sue is correct. 3 x 11 = 33 and 33 + 6 = 39 so $3\frac{6}{11} = \frac{39}{11}$.

9a. $\frac{33}{6}, \frac{44}{8}$ or $\frac{55}{10}$

Greater Depth

7b. $7\frac{2}{8} = \frac{29}{4}$

8b. Simon is incorrect; $4\frac{2}{9} = \frac{38}{9}$.

9b. $\frac{40}{12}$ or $\frac{10}{3}$

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Reasoning and Problem Solving – Mixed Numbers to Improper Fractions ANSWERS