Day 3 extension questions

1. Three children have incorrectly converted $3\frac{2}{5}$ into an improper fraction.

Annie: $3\frac{2}{5} = \frac{6}{15}$

Mo: $3\frac{2}{5} = \frac{15}{5}$

Dexter: $3\frac{2}{5} = \frac{32}{5}$

What mistake has each child made?

2. Fill in the missing numbers.

How many different possibilities can you find for each equation?

$$2\frac{\square}{8} = \frac{\square}{8}$$

$$2\frac{\square}{5} = \frac{\square}{5}$$

Compare the number of possibilities you found.

3. Three children are counting in quarters.

Whitney: $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}, \frac{5}{4}, \frac{6}{4}, \frac{7}{4}$

Teddy: $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}, 1, 1\frac{1}{4}, 1\frac{1}{2}, 1\frac{3}{4}$

Eva: $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, 1, 1\frac{1}{4}, 1\frac{2}{4}, 1\frac{3}{4}$

Who is counting correctly?
Explain your reasons.

4. Play the fraction game for four players. Place the four fraction cards on the floor. Each player stands in front of a fraction. We are going to count up in tenths starting at 0
When you say a fraction, place your foot on your fraction.

$$\frac{1}{10} \qquad \frac{1}{5}$$

$$\frac{3}{10} \qquad \frac{1}{2}$$

How can we make 4 tenths?
What is the highest fraction we can count to?
How about if we used two feet?

5. Ron makes $\frac{3}{4}$ and $\frac{3}{8}$ out of cubes.

He thinks that $\frac{3}{8}$ is equal to $\frac{3}{4}$

Do you agree?
Explain your answer.

6.

Always, sometimes, never?

If one denominator is a multiple of the other you can simplify the fraction with the larger denominator to make the denominators the same.

Example:

Could $\frac{?}{4}$ and $\frac{?}{12}$ be simplified to $\frac{?}{4}$ and $\frac{?}{4}$?

Prove it.

1.

Three children have incorrectly converted $3\frac{2}{5}$ into an improper fraction.

Annie: $3\frac{2}{5} = \frac{6}{15}$

Mo: $3\frac{2}{5} = \frac{15}{5}$

Dexter: $3\frac{2}{5} = \frac{32}{5}$

What mistake has each child made?

Annie has multiplied the numerator and denominator by 3

Mo has multiplied the correctly but then forgotten to add on the extra 2 parts.

Dexter has just placed 3 in front of the numerator.

2.

Fill in the missing numbers.

How many different possibilities can you find for each equation?

$$2\frac{\square}{8} = \frac{\square}{8}$$

$$2\frac{\square}{5} = \frac{\square}{5}$$

Compare the number of possibilities you found.

$2\frac{1}{8} = \frac{17}{8}$ $2\frac{2}{8} = \frac{18}{8}$

$2\frac{3}{8} = \frac{19}{8}$ $2\frac{4}{8} = \frac{20}{8}$

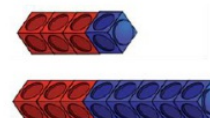$2\frac{5}{8} = \frac{21}{8}$ $2\frac{6}{8} = \frac{22}{8}$

$2\frac{7}{8} = \frac{23}{8}$

There will be 4 solutions for fifths.

Teacher notes: Encourage children to make generalisations that the number of solutions is one less than the denominator.

3.

Three children are counting in quarters.

Whitney: $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}, \frac{5}{4}, \frac{6}{4}, \frac{7}{4}$

Teddy: $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}, 1, 1\frac{1}{4}, 1\frac{1}{2}, 1\frac{3}{4}$

Eva: $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, 1, 1\frac{1}{4}, 1\frac{2}{4}, 1\frac{3}{4}$

Who is counting correctly? Explain your reasons.

They are all correct, they are all counting in quarter. Teddy has simplified all answers and Eva has converted improper fractions to mixed numbers.

4.

Play the fraction game for four players. Place the four fraction cards on the floor. Each player stands in front of a fraction. We are going to count up in tenths starting at 0 When you say a fraction, place your foot on your fraction.

$\frac{1}{10}$ $\frac{1}{5}$

$\frac{3}{10}$ $\frac{1}{2}$

How can we make 4 tenths? What is the highest fraction we can count to? How about if we used two feet?

Children can make four tenths by stepping on one tenth and three tenths at the same time. With one foot, they can count up to 11 tenths or one and one tenth. With two feet they can count up to 22 tenths.

5.

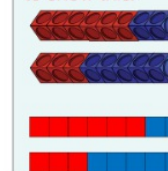Ron makes $\frac{3}{4}$ and $\frac{3}{8}$ out of cubes.

He thinks that $\frac{3}{8}$ is equal to $\frac{3}{4}$

Do you agree? Explain your answer.

Possible answer: I disagree with Ron because the two wholes are not equal. He could have compared using numerators or converted $\frac{3}{4}$ to $\frac{6}{8}$ If he does this he will see that $\frac{3}{4}$ is greater. Children may use bar models or cubes to show this.

6.

Always, sometimes, never?

If one denominator is a multiple of the other you can simplify the fraction with the larger denominator to make the denominators the same.

Example:

Could $\frac{?}{4}$ and $\frac{?}{12}$ be simplified to $\frac{?}{4}$ and $\frac{?}{4}$?

Prove it.

Sometimes

It does not work for some fractions e.g. $\frac{8}{15}$ and $\frac{3}{5}$

But does work for others e.g. $\frac{1}{4}$ and $\frac{9}{12}$