

Discussion Problems

Step 4: Number Sequences

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 \[for example, \$2/5 + 4/5 = 6/5 = 1 \frac{1}{5}\$ \]](#)

Mathematics Year 5: (5F3) [Compare and order fractions whose denominators are all multiples of the same number](#)

About this resource:

This resource has been designed for pupils who understand the concepts within [this step](#). It provides pupils with more opportunities to enhance their reasoning and problem solving skills through more challenging problems. Pupils can work in pairs or small groups to discuss with each other about how best to tackle the problem, as there is often more than one answer or more than one way to work through the problem.

There may be various answers for each problem. Where this is the case, we have provided one example answer to guide discussion.

We recommend self or peer marking using the answer page provided to promote discussion and self-correction.

More [Year 5 Fractions](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Number Sequences

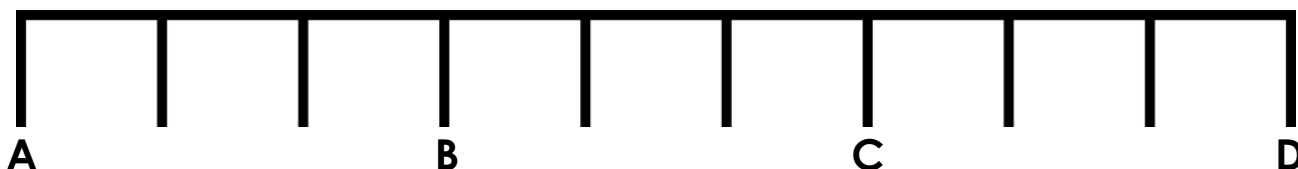
1. Below is a number sequence. Use the clues to find the possible values of B and D.

B is a mixed number with an odd whole number that is less than 5.

In the fraction for B, the numerator is a third of the denominator.

D is an improper fraction with a multiple of 3 as the denominator.

The sequence increases by a fraction that has a numerator greater than 1.



Use the possible values for B and D to investigate the values of A and C, where A is a mixed number and C is an improper fraction.

DP

2. Caroline has been learning about number sequences and has thought of a number sequence of her own. She has given you some clues to help you find her sequence.



Caroline

The number sequence starts with $4\frac{6}{14}$.

The number sequence is descending by a fraction that has an even numerator and an odd denominator.

There are 6 numbers in the sequence.

Explore the different number sequences that Caroline could be thinking of.

DP

Number Sequences

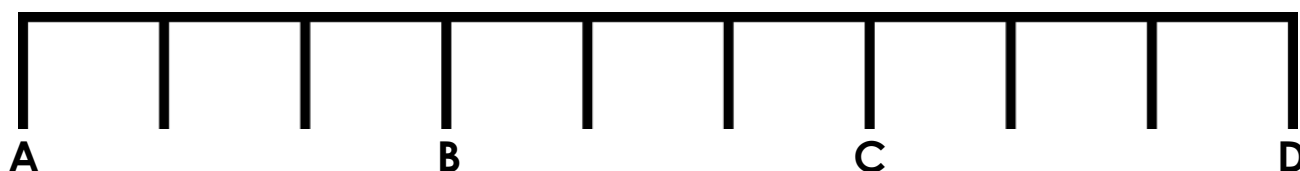
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In the fraction for B, the numerator is a third of the denominator.

D is an improper fraction with a multiple of 3 as the denominator.

The sequence increases by a fraction that has a numerator greater than 1.



Use the possible values for B and D to investigate the values of A and C, where A is a mixed number and C is an improper fraction.

Various answers, for example:

A. $2\frac{6}{9}$; B. $3\frac{3}{9}$; C. $\frac{36}{9}$; D. $\frac{42}{9}$

DP

2. Caroline has been learning about number sequences and has thought of a number sequence of her own. She has given you some clues to help you find her sequence.



Caroline

The number sequence starts with $4\frac{6}{14}$.

The number sequence is descending by a fraction that has an even numerator and an odd denominator.

There are 6 numbers in the sequence.

Explore the different number sequences that Caroline could be thinking of.

Various answers, for example: The sequence could decrease by $\frac{2}{7}$ each time.

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

DP