Fractions and decimals progression map Year 6

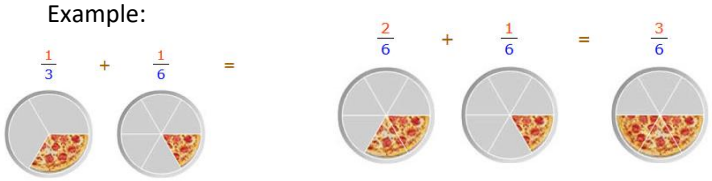
1. Convert decimals (up to 3 places) to fractions and vice versa using thousandths, hundredths and tenths.
   Example: $0.125 = \frac{125}{1000} = \frac{1}{8}$

2. Identify the value of each digit in numbers with up to 3 decimal places.
   Multiply and divide numbers by 10, 100 and 1000 giving answers to up to 3 decimal places; use this knowledge to compare and order numbers, and round numbers, with up to 3 decimal places.
   Example: 3·924 has nine tenths, two hundredths, four thousandths 4·325 kg = 4325 g 4·584 < 4·587

3. Compare and order fractions, including fractions greater than 1.
   Example: Order from smallest to largest : $\frac{7}{8}$ $\frac{1}{2}$ $\frac{3}{4}$ *convert to common denominators* eg $\frac{1}{2} = \frac{4}{8}$

4. Convert improper fractions (top-heavy fractions) to mixed numbers (a whole number and fraction).
   Example: $\frac{14}{4}$ *= 3 ½ (14÷4 = 3 remainder 2 or* $\frac{2}{4} = \frac{1}{2}$ $\frac{16}{6} = 2\frac{2}{3}$

5. Add and subtract fractions (including mixed numbers):
   Example:



6. Convert mixed numbers (a whole number and a fraction) to improper fractions (top-heavy fraction).
   Example: $4\frac{5}{7}$ = (4x7 + 5) $7^{ths} = \frac{33}{7}$

7. Find non-unit fractions of amounts.
   Example: $\frac{4}{7}$ *of 42 = (42 ÷ 7) x 4 = 24*

8. Express a remainder after division as a fraction, simplifying where possible.
   Example: 3523 ÷ 6 = 587 r 1 = 587 $\frac{1}{6}$

9. Use knowledge of equivalence between fractions and percentages to solve problems.
   Example: $\frac{3}{4}$*m = 0.75 m = 75% of a metre 10% of £12 =* $\frac{1}{10}$ *of £12 = £12 ÷ 10 = £1·20*

10. Solve problems involving the calculation of percentages.
    Example: Davinder has been asked to reduce the price of CDs by 10%. How much will a CD costing £12 be reduced by?

11. Multiply fractions less than 1 by whole numbers.
    Example: $2 \times \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$

12. Divide proper fractions by whole numbers.

Example: $\frac{1}{2} \div 3 = \frac{1}{6}$

13. Associate a fraction with division and calculate decimal equivalents for a simple fraction.
Example: $\frac{1}{4} =$ *1 ÷ 4 = 0·25*

14. Compare and order numbers with 1, 2 or 3 decimal places.
Example: Write in order: 2·874, 2·78 and 2·87.

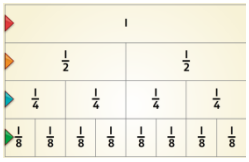
15. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
Example: $\frac{1}{4}$*m = 0·75 m = 75% of a metre*

16. Multiply pairs of unit fractions by reading the × sign as 'of'.
Example: $\frac{1}{2}$ *of* $\frac{1}{5}$ = $\frac{1}{2} \times \frac{1}{5} = \frac{1}{10}$

17. Use written division methods in cases where the answer has up to 2 decimal places.
Example: 1266 ÷ 8 = 158 r 2 = 158.25

18. Simplify fractions.
Example: $\frac{8}{16} = \frac{4}{8} = \frac{2}{4} = \frac{1}{2}$

19. Use knowledge of equivalence to compare and order fractions.
Example: $\frac{3}{8} > \frac{1}{4}$



20. Associate a fraction with division to find an unknown number using inverse operations.
Example: $\frac{88}{m} = 4$*. What is m?* $(4m = 88 \text{ so } m = 22)$

21. Recall and use equivalences between simple fractions, decimals and percentages, including solving word problems,.
Example: 360 cats are tested. 90 of the cats prefer wet cat food to dry cat food. 90 out of 360 = 90 360 = 1 4 = 25% of cats

22. Solve problems involving similar shapes where the scale factor is known or can be found.
Example: A model car is 1/5 the size of a real car. If the length of the model car is 86 cm, what is the length of the real car?