## Ratio

| Simplifying Fiatios and Fiepresenting as Fractions | As both A as a Fraction of the whole．A as a fraction of B．substituting parts of the ratio into algebraic expressions． | Golden ratio face beauty |
| :---: | :---: | :---: |
| Diwiding Into a Fiatio | Diwide into a gisen ratio using a wariety of methods． including bar modelling． | Mixing liquidstingredients together in the correct amounts．Fashion industry clothing sizes |
| Given Part of a Ratio Find the whole or Dther Parts | Solve problems inwolving one part or morerless than type questions．Use a wariety of methods． |  |


| Simplifying Ratios and Representing as Fractions | As both A as a Fraction of the whole，$A$ as a fraction of $B$ ． substituting parts of the ratio into algebraic expressions． | Golden ratio face beauty |
| :---: | :---: | :---: |
| Dividing Into a Riatio | Divide into a given ratio using a wariety of methods． including bar modelling． | Missing liquidslingredients together in the correct amounts．Fashion industry olothing sizes |
| Given Part of a Ratio Find the whole or Dither Parts | Solve problems involving one part or morelless than type questions．Use a variety of methods． |  |
| Ratios as a Limiting Factor | Solve problems involving a limiting factor of the ratio．Use a wariety of methods． | Working out how manyimuch you can make with the ingredients you have |


| Gimplifying Figriges and Fiepreserting ヨミFractions | As buth A ョミ ョ Fraotign of the whole，A Es afraction of E．Eubetituting pigts of the r．atio into algebreaic expressians． | Golderiretiaface beguty |
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| Giwer Figrt af a Figtig Find the whole ar Guther F＇ョrts | Salue prablems inuraing <br>  typequestions．Lise a briety of methouds． |  |
| Riatios as a Limiting Feger | Galue problems innolwing a limiting faetor of theretio． <br>  | working gut how manyiriuch yiou can miョke with the ingredient：$=$ you トロッツ |
| Three＇wisy Figrio | Find equiwialent parts of Gorrespunding r．atios in arder to Ealbe probilemis． | Fashion industry clothing sizes |
| ERamging Fiatios | Finid parts and wholes af r．atios when the ratige and piarts hable ohanged from，the Grigingl． |  |

## Key Knowledge/Prior Learning KS2/3 and Retrieval and Suggested Starters

- 4 operations
- Multipliers
- Fractions
- Factors and multiples
- solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.
- Multiplication/division
- Adding fractions
- HCF
- LCM
- Substitution


## KS3 National Curriculum - what students will be practicing and Key Questions

- Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction
- Use ratio notation, including reduction to simplest form
- Expressing ratios as fractions
- Sharing an amount in a ratio
- Finding the total given part of a ratio
- Solve problems involving ratio (combining ratios)
- Using as a limiting factor
- Find equivalent parts of corresponding ratios


## Specific Ambitious Knowledge <br> Pictorial representations/bar modelling

## Key Vocabulary/Literacy Opportunities

- Simplify
- Equivalent
- Proportion
- Part Whole
- Combine
- Representing
- Share
- Corresponding
- Original


## Key Formulae/Knowledge

Sharing into a ratio
Nikki : Gemma


Value of each box $=£ 36 \div 9=£ 4$ per box
Nikki : Gemma

| 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

£16 £20

Parts known
Laura makes some orange juice by mixing orange cordial and water in the ratio $3: 10$.
She uses 42 mL of orange cordial.
How much water does she use?


3 parts $=42 \mathrm{~mL}$
1 part $=42 \div 3=14 \mathrm{~mL}$
10 parts $=14 \times 10=140 \mathrm{~mL}$
Laura uses 140 mL of water.

Differences known
Beth and Emily share money in the ratio 3:5
Emily receives $£ 12$ more than Beth.
How much money does each girl receive?


Students stop reading after $£ 12$, assuming that Emily gets $£ 12$ - emphasis the no comma, so no pause in reading.


Maths in context (Historical, Real Life and Student Thinking Points).

## Projects/Enrichment/Investigations

Core:
Coding
Upper:
Coding
Set 1:
Coding

