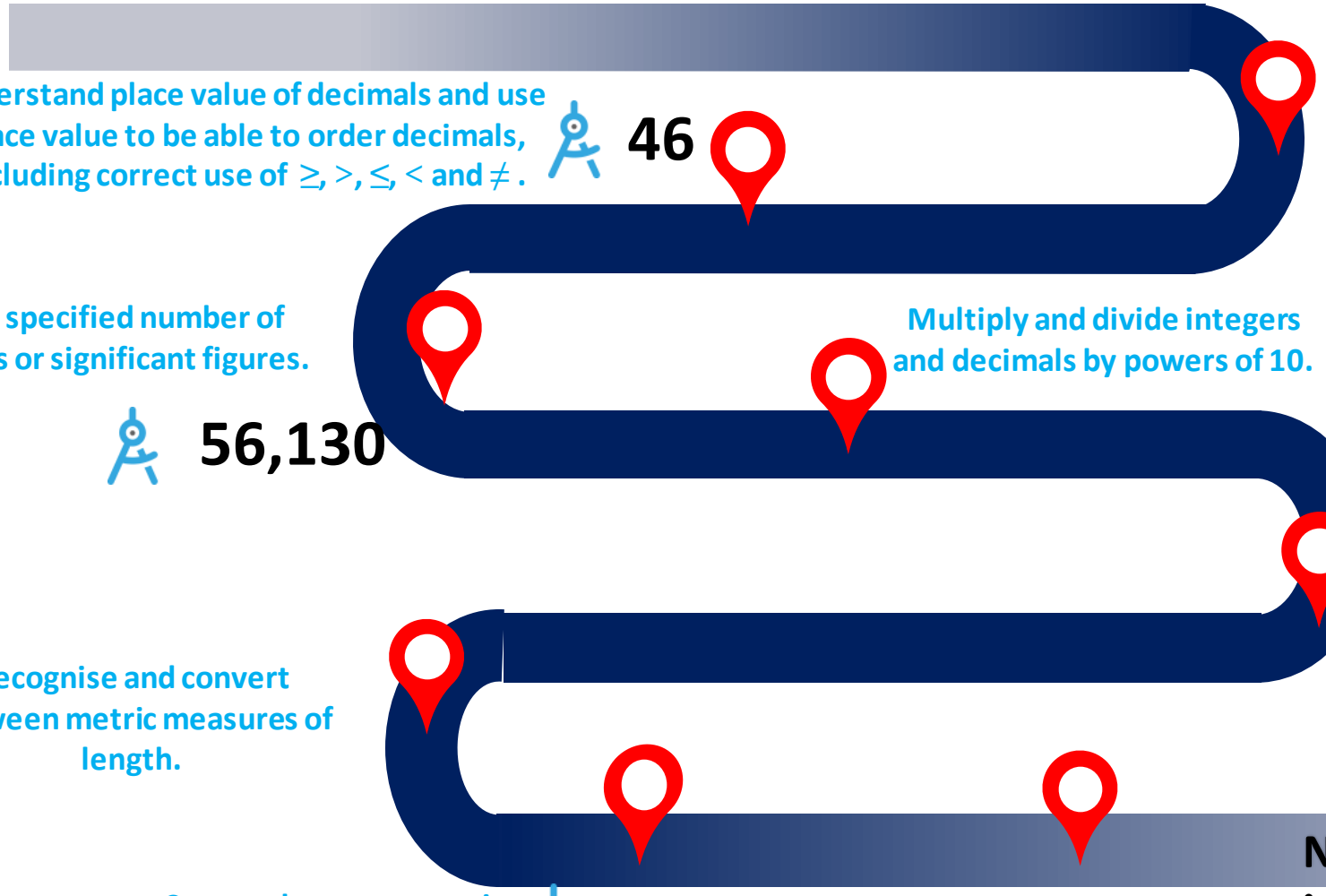
NUMBER

YEAR 7 AUTUMN 1 : Place value, decimals and using scales

Prerequisite learning:

- Determine the value of multi -digit integers (year 2-4)
- Round any number to 10, 100, 1000, 10 000, 100 000 (year 4-6).
- Read, write and convert standard units of measure. (year 4-6)



Understand place value of decimals and use place value to be able to order decimals, including correct use of $\geq, >, \leq, <$ and $\neq$. 46

Understand place value and work with numbers up to one million. 13

Rounding to specified number of decimal places or significant figures. 56,130

Multiply and divide integers and decimals by powers of 10. 15,16

Estimating using units of length and weight .

Recognise and convert between metric measures of length. 691

Convert between metric measures of mass. 691

Use and understand scale drawings. 864

Next steps:

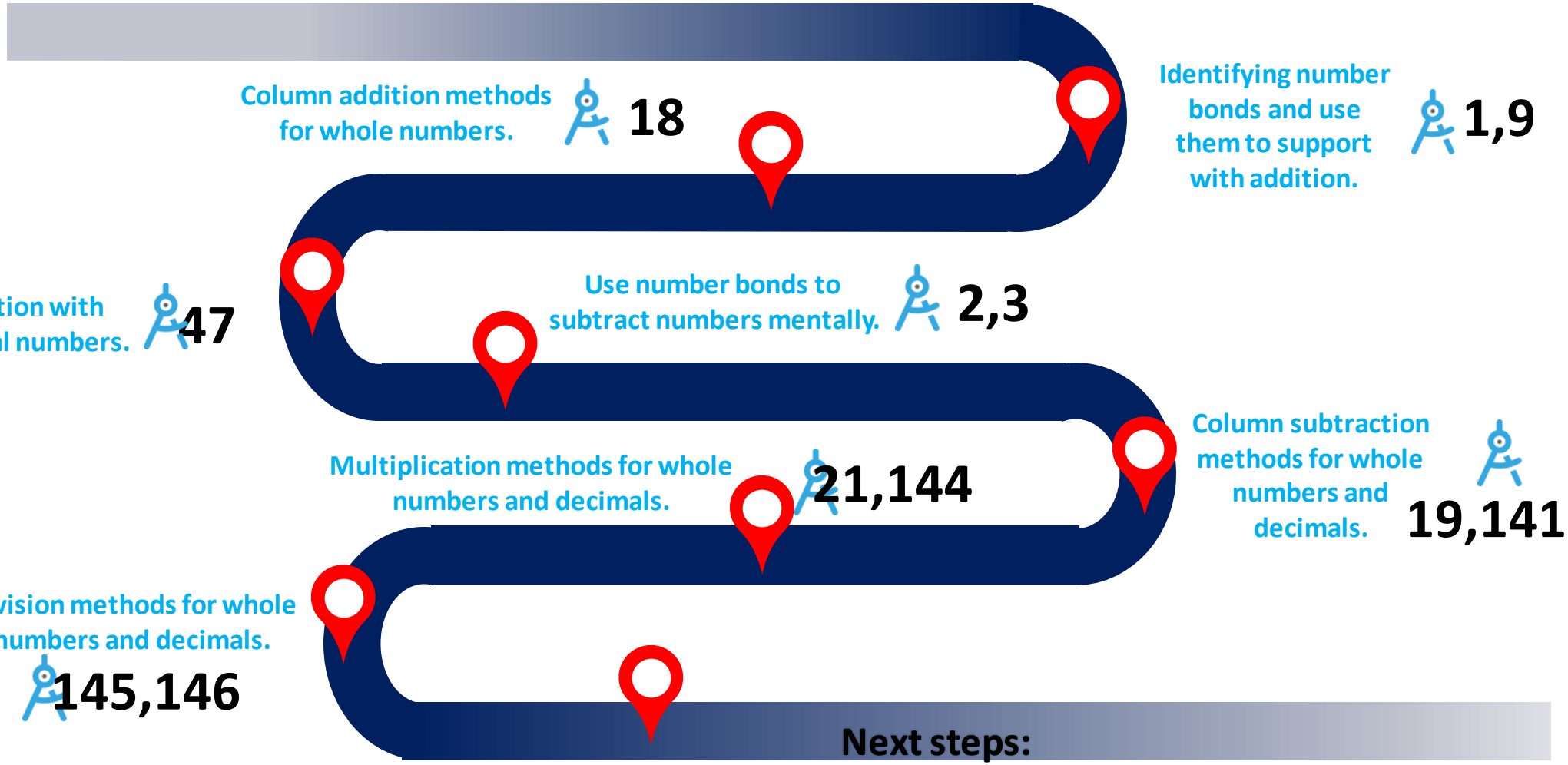
- Integers and decimals (Year 7 AUTUMN 2)
- Factors, multiples and primes (YEAR 7 AUTUMN 2)
- Identifying HCF and LCM. (YEAR 7 AUTUMN 2)

Dudley Academies Trust
Discover more

Prerequisite learning:

- Multiplicative number bonds. (year 2-4)
- Understand place value for whole numbers and decimals (year 4-6)

YEAR 7 AUTUMN 1 : Four operations with integers and decimals



Next steps:

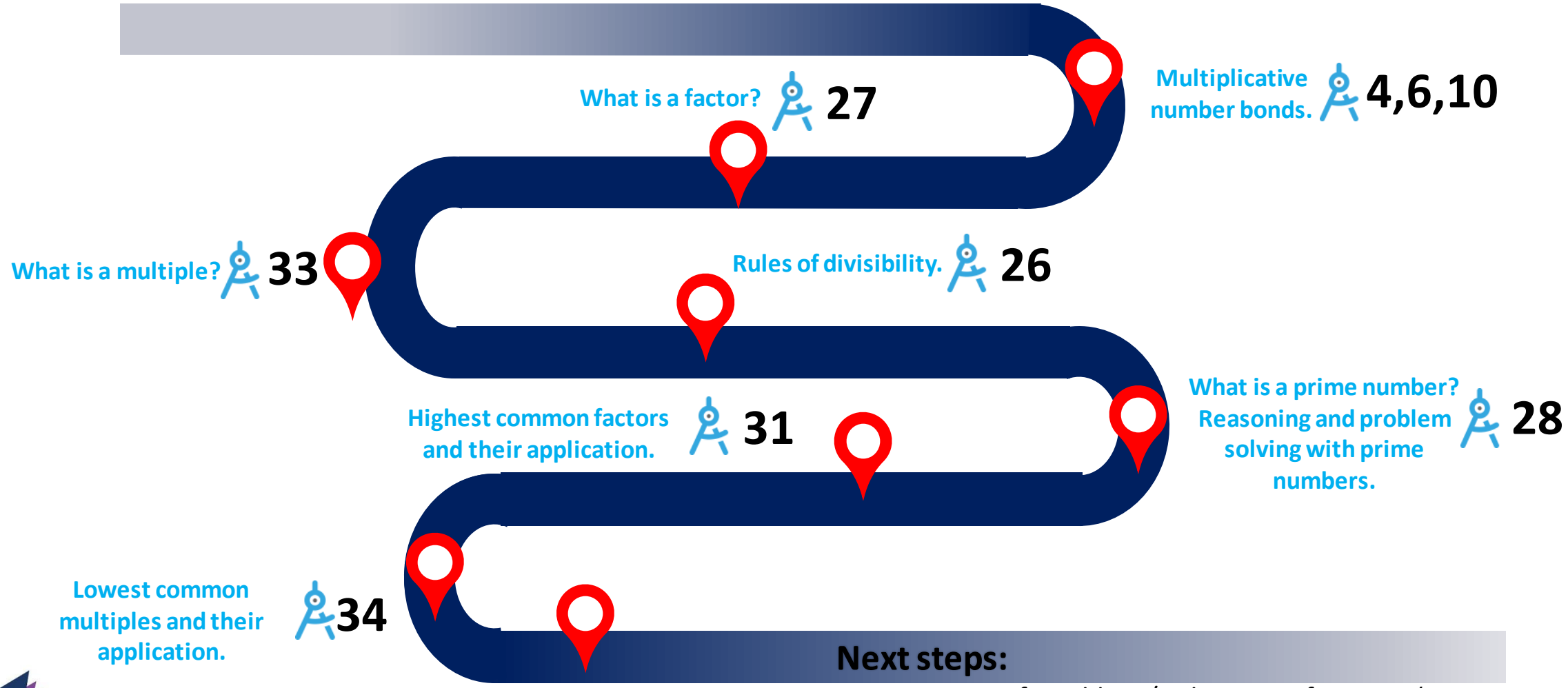
- Four operations with fractions (YEAR 7 SPRING 2, SUMMER 1)
- Compare fractions, decimals and percentages (YEAR 7 SUMMER 2)
- Converting fractions, decimals and percentages (YEAR 8 Autumn 1)

Dudley Academies Trust
Discover more

YEAR 7 AUTUMN 2: Factors, multiples, primes, HCF and LCM

Prerequisite learning:

- Repeated addition strategies (year 3)
- All Multiplication to 12x12 (Year 4)



Next steps:

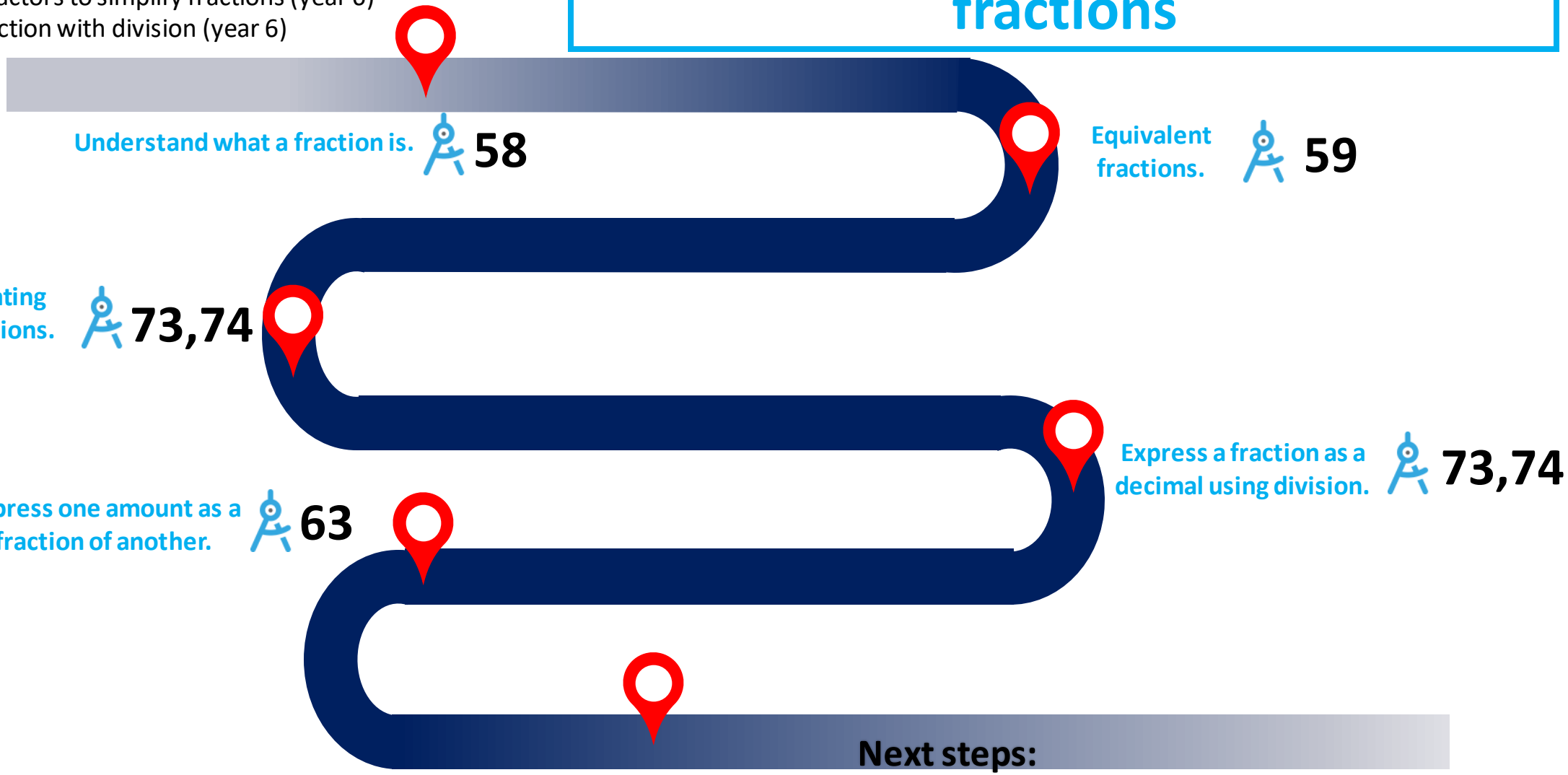
- Using LCM for adding / subtracting fractions (Year 7 Spring 2).
- Prime factorisation - “product of primes”. (Year 8 Spring 2)

Dudley Academies Trust
Discover more

YEAR 7 SPRING 1: Understanding fractions

Prequistie learning:

- Understand how to group and share equally (year 4)
- Use common factors to simplify fractions (year 6)
- Associate a fraction with division (year 6)



Next steps:

- Addition and subtraction of fractions. (YEAR 7 Spring 2)
- Multiplication and division of fractions. . (YEAR 7 Spring 2)
- Mixed numbers and fractions.

Dudley Academies Trust
Discover more

Prerequisite learning: Year 7 SP1

- Understand equivalent fractions (Year 4-6)
- Convert between fractions and decimals (year 5/6
- Fractions of an amount.

YEAR 7 SPRING 2/ SUMMER 1: Four operations with fractions

Next steps:

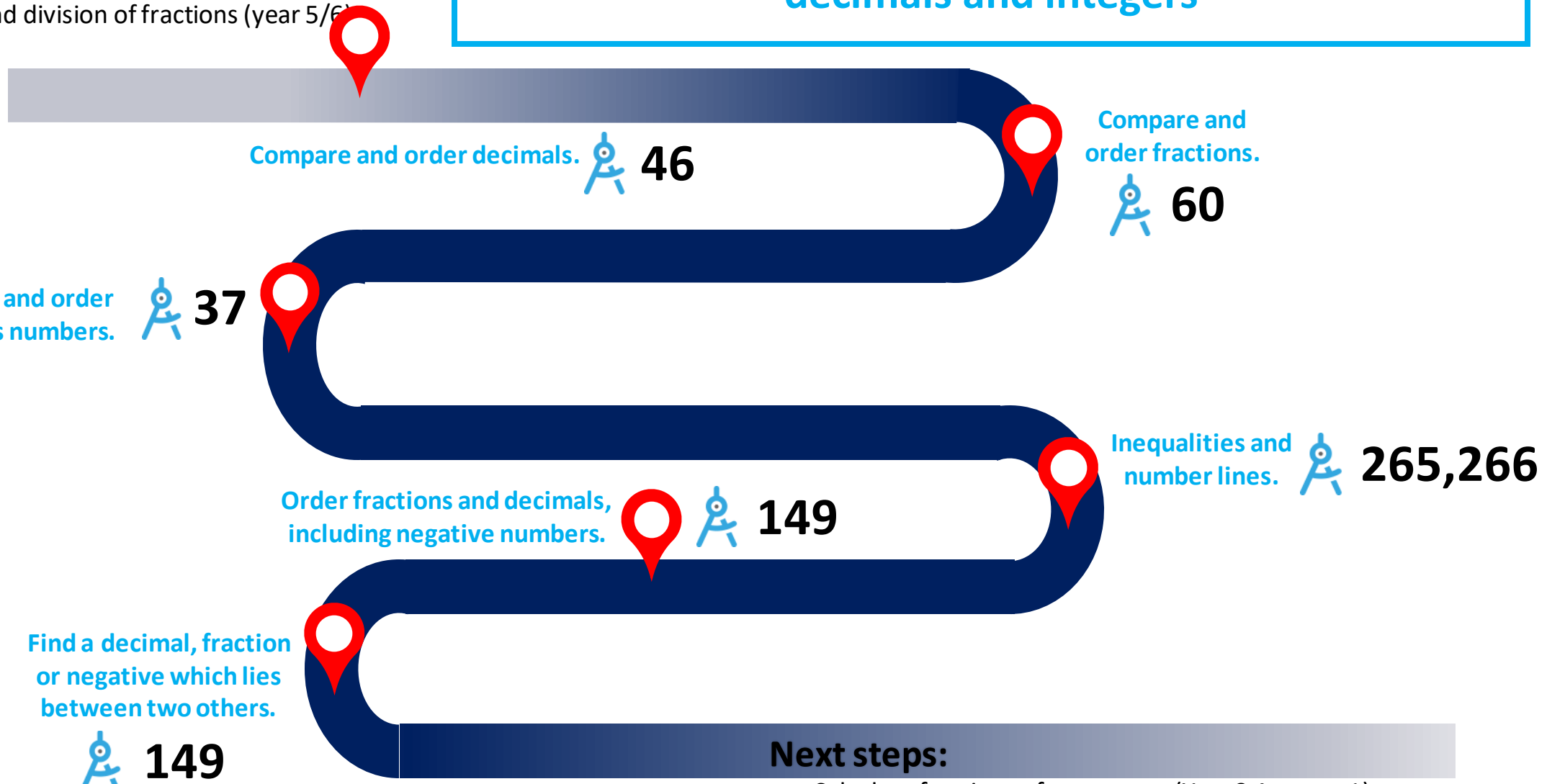
- Compare and order fractions (year 7 summer 2)
- Find what lies between two fractions (year 7 summer 2)
- Order fractions, decimals and percentages (year 8 Autumn 1).

Dudley Academies Trust
Discover more

YEAR 7 SUMMER 2: Compare and order fractions, decimals and integers

Prerequisite learning: (year 7 SP2/SU1)

- Simplify fractions (year 6)
- Addition and subtraction of fractions (year 3-6)
- Multiplication and division of fractions (year 5/6)



Next steps:

- Calculate fractions of an amount (Year 8 Autumn 1)
- Fraction, decimal and percentage multipliers (Year 8 Autumn 1
- Further calculations involving negative numbers (year 8 summer 1)

Dudley Academies Trust
Discover more

YEAR 8 AUT 1: Order of operations

Prerequisite learning:

- Understand the associative nature of certain calculations (YEAR 7 NUMBER TRHOUGHOUT)
- Confidently perform four operations mentally (YEAR 7 AUT1/2)
- To understand the negative number line (YEAR 7 SU2)

Understand the links between $+, -, \times, \div$ 1-7

Confidently perform the four operations with negative numbers. 39-43

Order calculations involving addition and subtraction. 24,44

Order calculations involving multiplication and division. 24, 44

Order calculations where indices are included. 120,150

Substitute into formulae correctly following the order of operations. 181-189

150 Order calculations involving brackets.

Next steps:

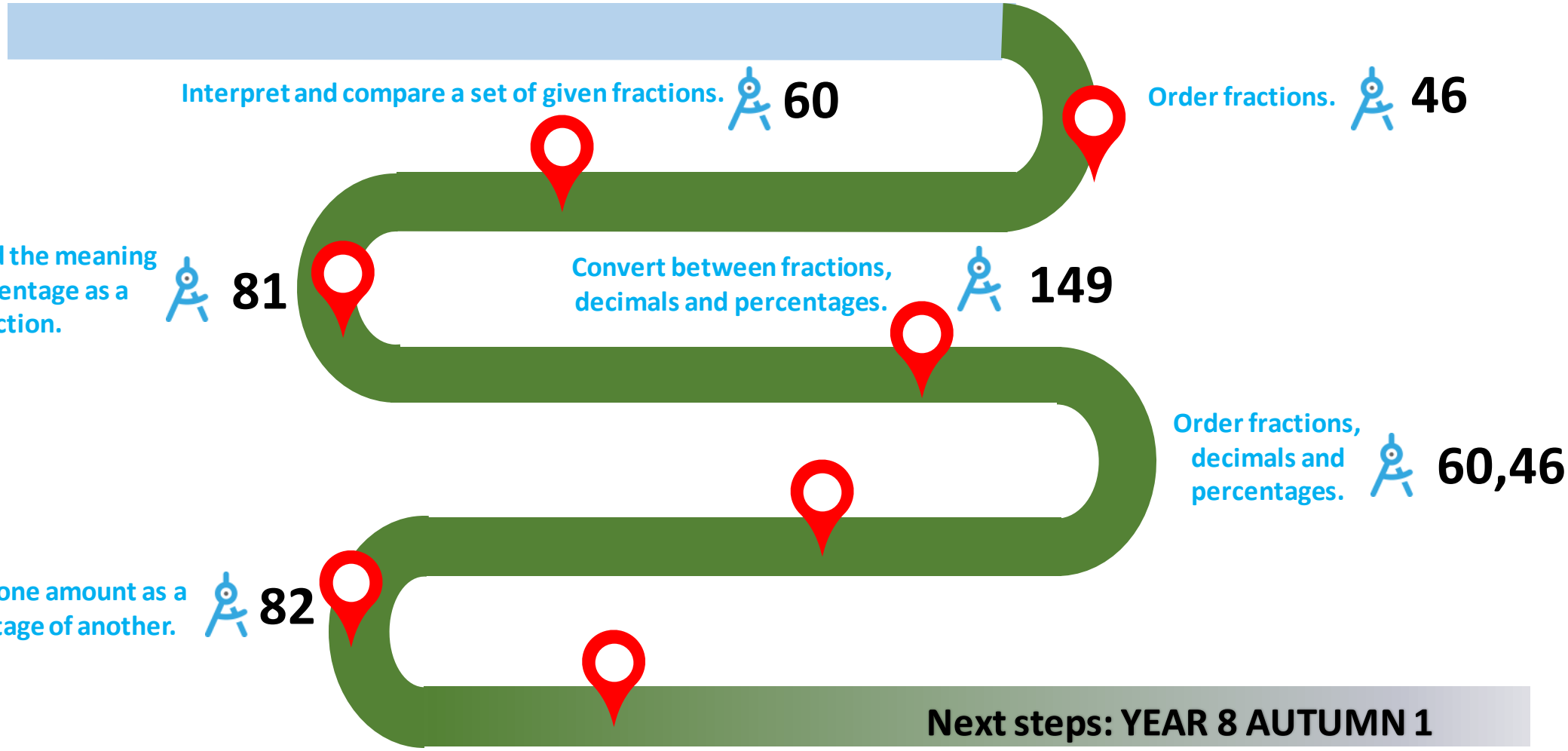
- Substitute into more complex formula including SUVAT equations- (YEAR 9)
- Use a calculator effectively (throughout)

Dudley Academies Trust
Discover more

YEAR 8 AUTUMN 1: Understanding percentages

Prerequisite learning: YEAR 7 SPR 1

- Understand equivalent fractions
- Convert between decimals and fractions
- Express one amount as a fraction of another.
- Finding a fraction of an amount.



Next steps: YEAR 8 AUTUMN 1

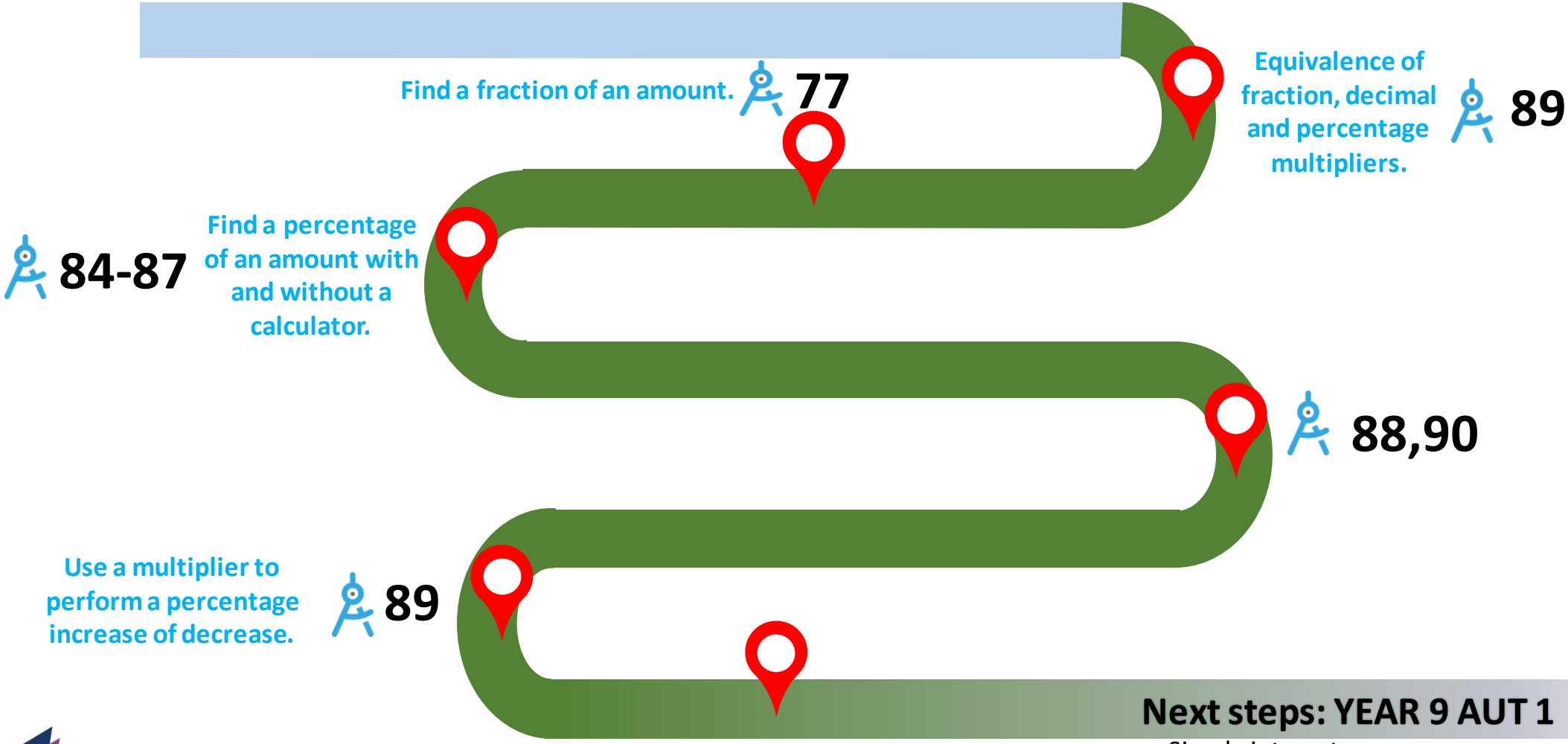
- Equivalence of fraction, decimal and percentage multipliers.
- Percentage of an amount.
- Percentage increase/decrease.
- Reverse percentage problems.

Dudley Academies Trust
Discover more

Prerequisite learning: YEAR 8 AUT 1

- Understand the meaning of a percentage as a fraction out of 100.
- Convert between fractions, decimals and percentages.

YEAR 8 Autumn 1: Fractions, decimals and percentages as operators



Next steps: YEAR 9 AUT 1

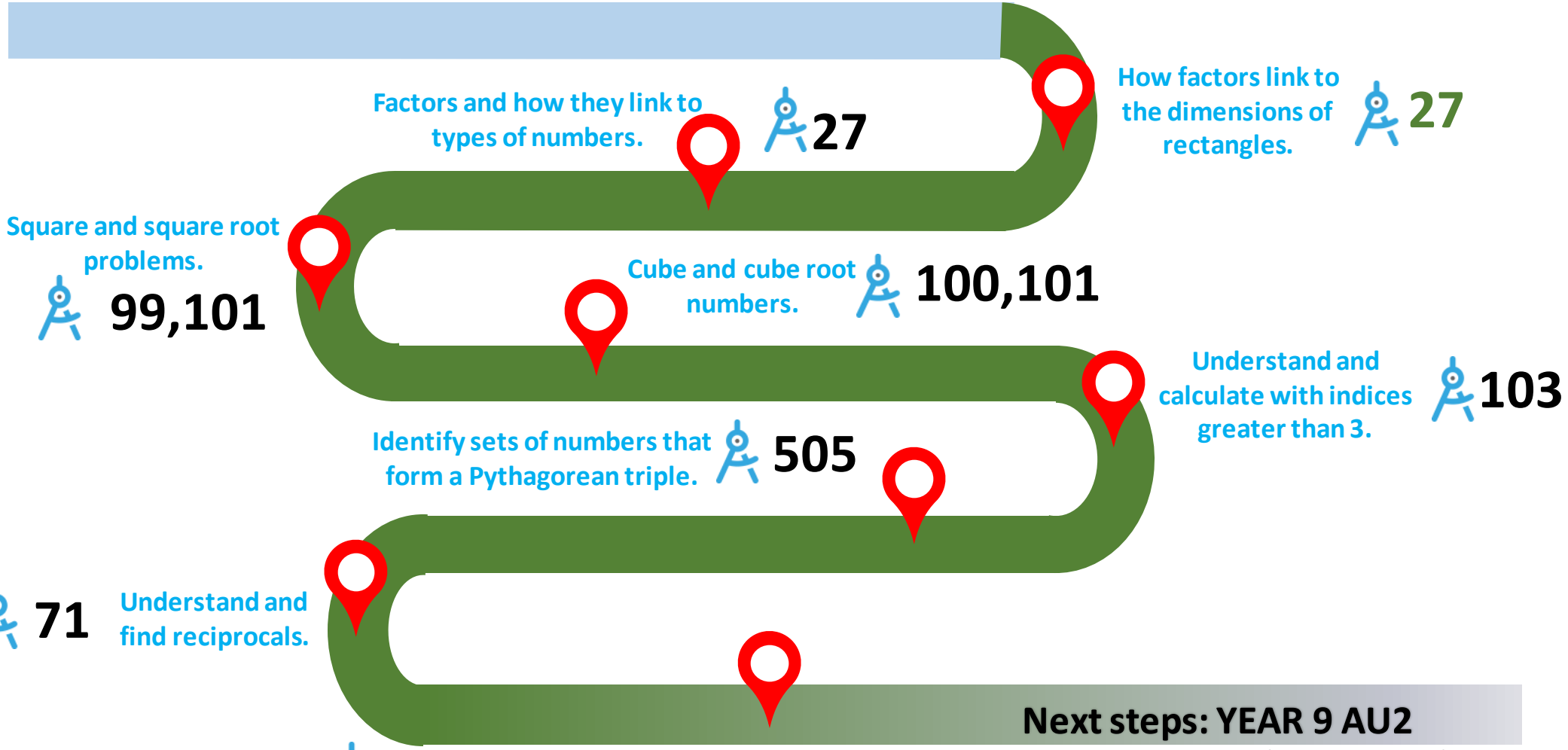
- Simple interest.
- Compound percentage problems.
- Finding a percentage change.

Dudley Academies Trust
Discover more

YEAR 8 SPRING 1: Powers and roots

Prerequisite learning:

- Calculations involving multiplication (YEAR 7 AU1/2)
- Listing factors and multiples (YEAR 7 AU2)
- Area of rectangles and volumes of cubes. (YEAR 7 SPR1)



Next steps: YEAR 9 AU2

- Find HCF and LCM from product of primes
- Reciprocals of fractions and decimals.
- Index laws.

Dudley Academies Trust
Discover more

NUMBER

Prerequisite learning:

- Rounding whole numbers (YEAR 7 AUT1)
- Multiplying by powers of 10. (YEAR 7 AUT1)
- Comparing numbers using the value of each digit (YEAR 7 AU2)
- Using negative numbers in context (YEAR 7 SU2)
- Types of number (YEAR 8 SPR2)

All video clip references belong to hegartymaths
www.hegartymaths.com

Understand place value and order integers and decimals, including correct use of $\geq$, $>$, $\leq$, $<$ and $\neq$.

13-17

Four operations with integers , decimals powers and roots use Order of Operations.

24, 39-42, 44, 46-51, 99-104, 108

Use index laws including fractional and negative powers.

102-110

Use rounding to estimate complex calculations.

17,56, 130-131

Rounding to specified number of decimal places or significant figures.

56,130

Prime factor decomposition, HCF and LCM using Venn diagrams.

29-35

Factors, multiples, HCF and LCM.

27,31,33,34

Convert large and small numbers using standard form and calculate with them.

121-129

Writing numbers in surd form, simplifying surds, and expanding brackets involving surds.

111-117

Dudley Academies Trust
Discover more

Next steps: (YEAR 10 AUT 1)

- Surds in context (H)
- Rationalising the denominator (H)
- Algebraic proof (H)

SPRING 2: FDP / RATIO AND PROPORTION

Prerequisite learning:

- Place value (YEAR 7 AUT1)
- Multiplication and division (YEAR 7AUT1/2
- Ordering integers on number lines. (YEAR 7 SU2)
- Percentage as an amount out of 100. (YEAR 8 AUT1)

All video clip references belong to hegartymaths
www.hegartymaths.com

Shading fractions , Equivalence and simplifying of fractions.
57-59, 61

Four operations with mixed and improper fractions.
65-66, 67-70

Convert between improper fractions and mixed numbers.
63-64

Compare and order fractions.
60

Find fractions of an amount.
77

Calculate a percentage of an amount and percentage change.
84-92

Calculate simple and compound interest.
93-94

Reverse percentages.
96

Convert between fractions, decimals and percentages and compare them.
73-76, 82-83

Convert fractions to recurring decimals.
53-54

Simplify ratios, write as fractions.
329-330

Divide into a given ratio and solve when one part is known.
332-337

Next steps:

- Convert recurring decimals to fractions (YEAR 10 AUT1)
- Percentage profit and loss (YEAR 10 AUT1)
- Using ratio to divide amounts in context. (YEAR 10 SPR1)

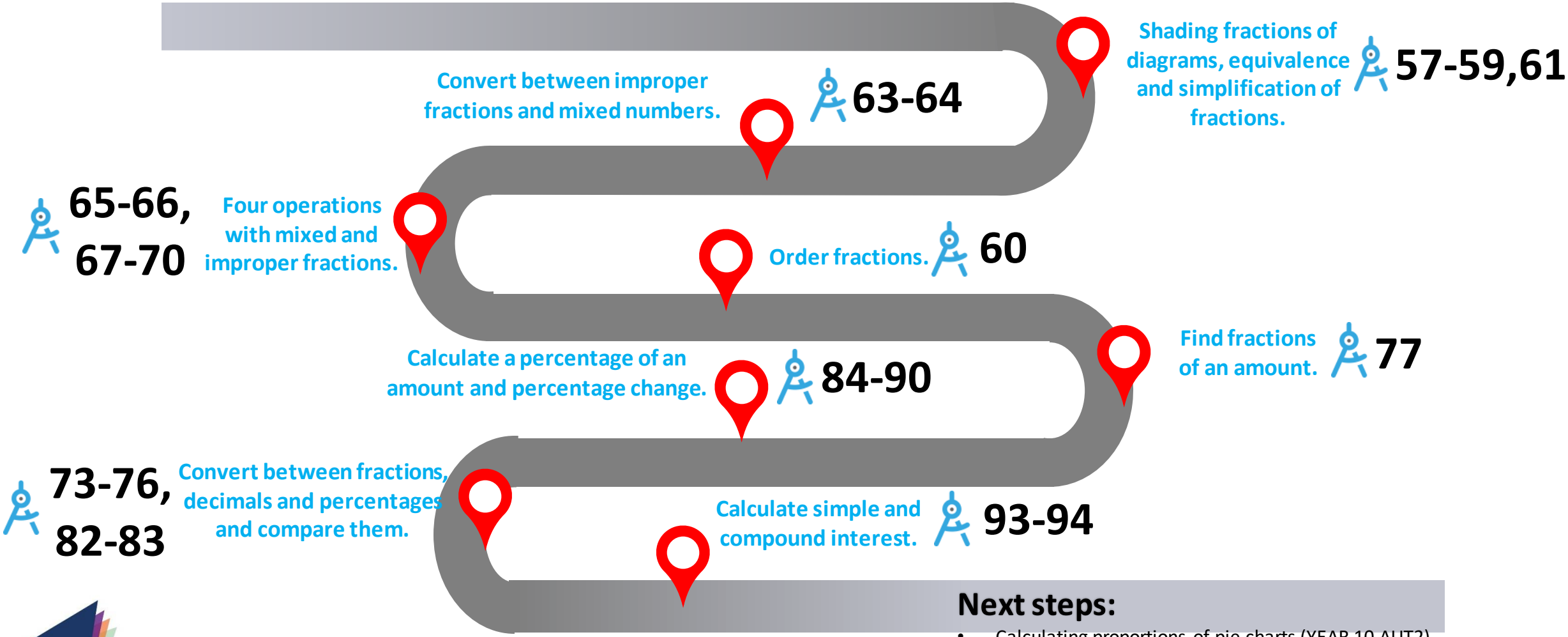
Dudley Academies Trust
Discover more

YEAR 10 ROUTE A

YEAR 10 AUTUMN 1: Fractions, decimals and percentages

Prerequisite learning:

- Place value (YEAR 7 AUT1)
- Multiplication and division (YEAR 7AUT1/2
- Ordering integers on number lines. (YEAR 7 SU2)
- Percentage as an amount out of 100. (YEAR 8 AUT1)



Next steps:

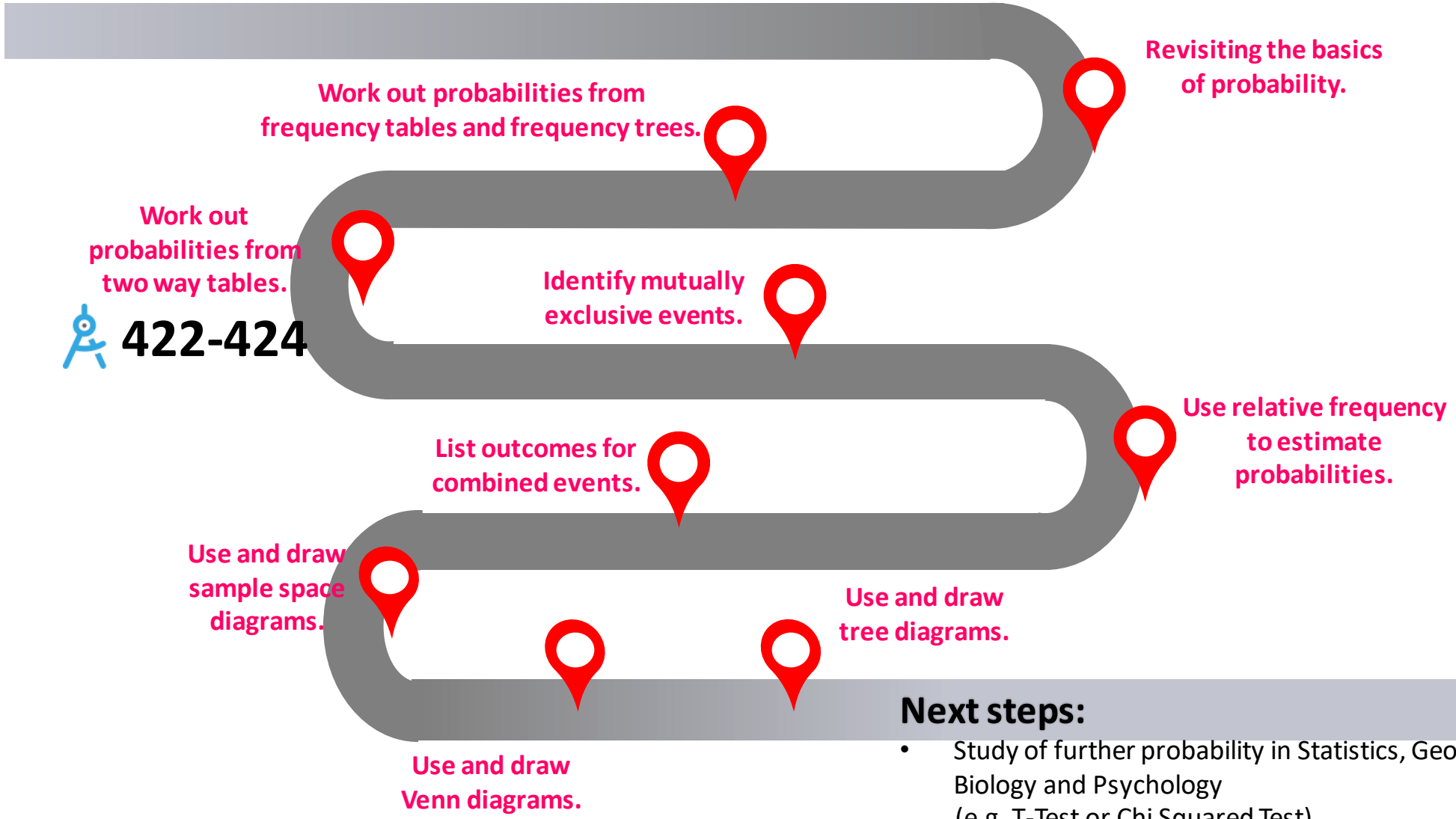
- Calculating proportions of pie charts (YEAR 10 AUT2)
- Using multipliers (YEAR 11
- Reverse percentages.
- Reverse fractions.

Dudley Academies Trust
Discover more

YEAR 10 SUMMER
FURTHER PROBABILITY

Prerequisite learning:

- Describing probability using words (year 8 Autumn 2)
- Understand how probability can be described in fractions, decimals and percentages (Year 8 Autumn 2)



Next steps:

- Study of further probability in Statistics, Geography, Biology and Psychology
(e.g. T-Test or Chi Squared Test)

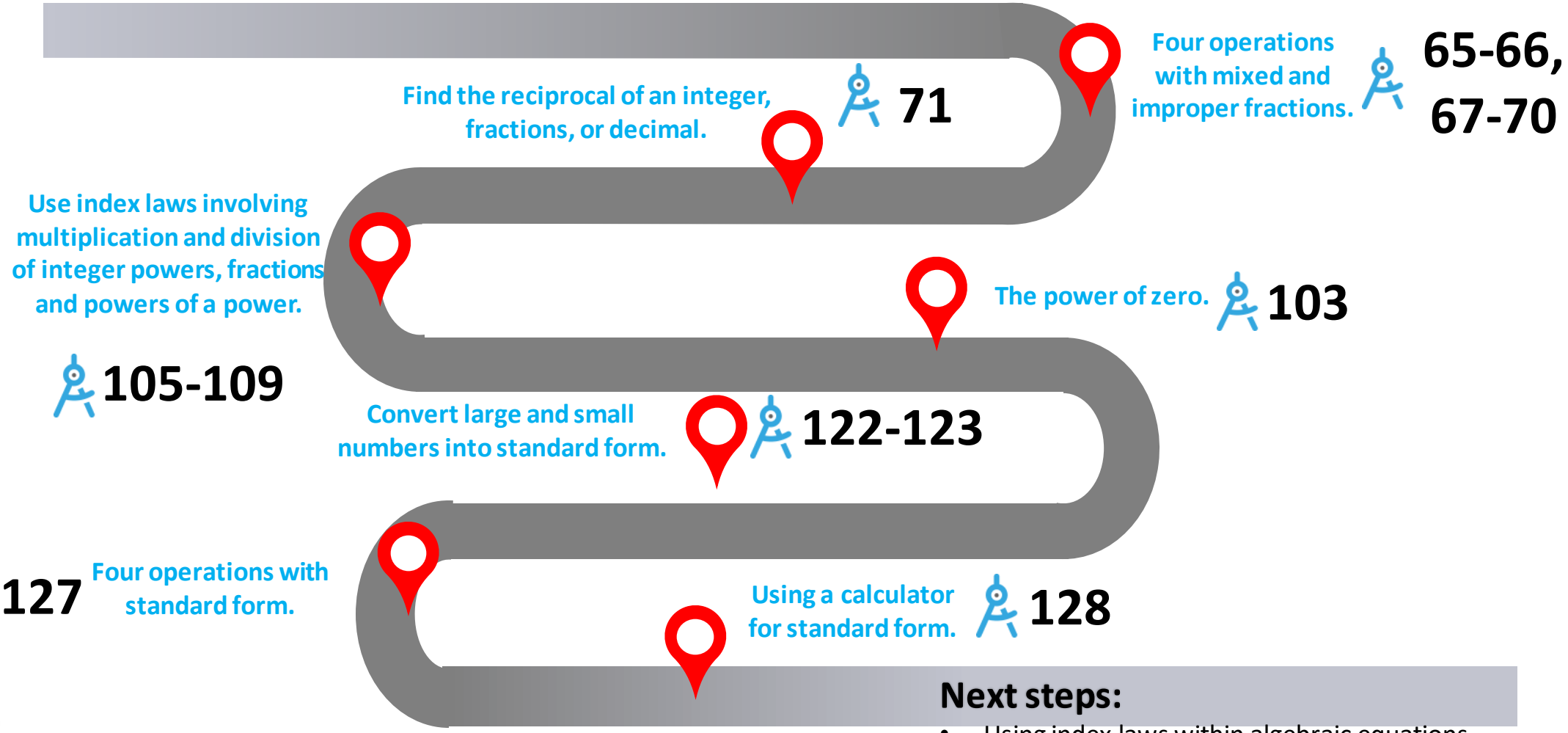
Dudley Academies Trust
Discover more

YEAR 11 ROUTE A

YEAR 11 AUTUMN 1 :Fractions, reciprocals, standard form and indices

Prerequisite learning:

- Place value. (YEAR 7 AUT 1)
- Multiplying by 10, 100, 1000 (YEAR 7 AUT 1/2, YEAR 9 AUT 2)
- Conversion of decimals to fractions (YEAR 7 SP1, YEAR 8 AUT 1, YEAR 9 SP2)
- Calculating powers of an integer. (YEAR 8 SPR2, YEAR 9 AUT 2)



Next steps:

- Using index laws within algebraic equations
- Estimation with standard form.
- Use of standard form in compound measure formulae.

Dudley Academies Trust
Discover more

YEAR 10 ROUTE B

Unit 4 - Fractions, decimals and percentages, ratio and proportion

Prerequisite learning:

- Place value (YEAR 7 AUT1)
- Multiplication and division.(YEAR 7 AUT!)
- Ordering integers on number lines.(YEAR 7 AUT1)
- Percentage as an amount out of 100 (YEAR 8 AUT1/2)

All video clip references belong to hegartymaths
www.hegartymaths.com

Equivalence of fractions. 61

Find fractions of an amount. 77

Convert between improper fractions and mixed numbers. 63-64

Four operations with mixed and improper fractions. 65-66, 67-70

Compare and order fractions. 60

Calculate a percentage of an amount and percentage change. 84-92

Calculate simple and compound interest. 93-94

Reverse percentages. 96

Convert between fractions, decimals and percentages and compare them. 73-76

Convert fractions to recurring decimals. 53-54

Simplify ratios, write as fractions. 329-330

Divide into a given ratio and solve when one part is known. 332-337

Next steps:

- Convert recurring decimals to fractions (YEAR 10 AUT1)
- Percentage profit and loss (YEAR 10 AUT1)
- Using ratio to divide amounts in context. (YEAR 10 SPR1)

Dudley Academies Trust
Discover more

YEAR 10 SUMMER 1: Venn and tree diagrams

Prerequisite learning:

- Calculations with fractions, decimals and percentages YEAR 7 SU1, YEAR 8 AUT 1)
- Basic probability, including simple vocabulary (YEAR 8 AUT2)
- Construction of two way tables (YEAR 8 SU2, YEAR 9 AUT1/2)

Understand and use experimental and theoretical probability. 355

Draw and use a sample space diagram. 358-359

Draw and use a Venn diagrams for probability and sets. Use union and intersection notation. 372-388

Understand conditional probabilities and decide if two events are independent. 361

Draw and use a two-way table for probability, including solving algebraic problems. 422-424

Draw and use a probability tree diagram. 362-367

Use diagrams to calculate conditional probability. 389-391 422-424

Compare experimental data and theoretical probabilities from samples of different sizes. 356,357

Next steps:

- Comparing probability distribution tables (geography)
- Chi-squared test (biology) and T-Test (psychology)
- Venn diagrams for characterization (English)

Dudley Academies Trust
Discover more

YEAR 11 ROUTE B