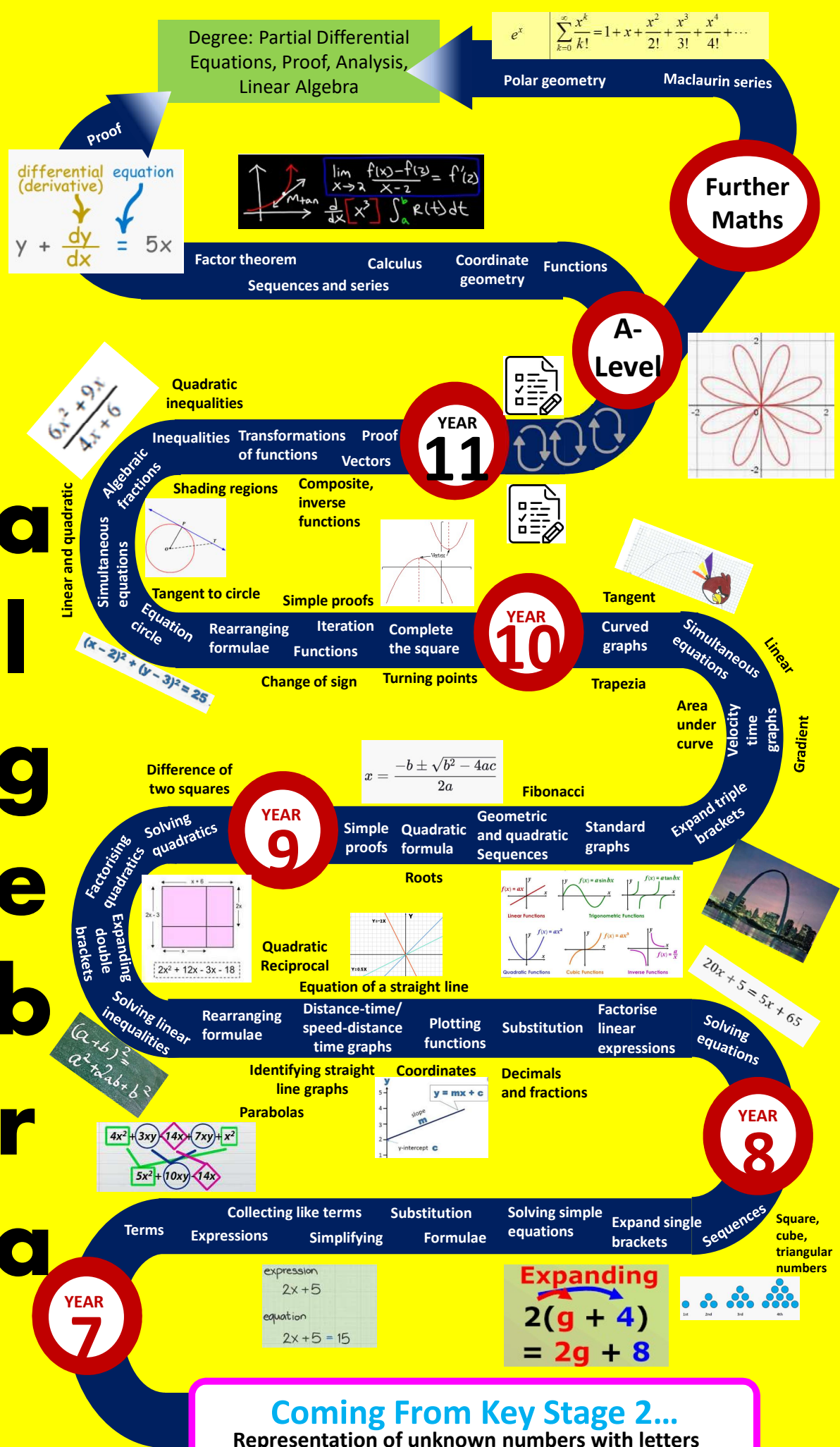


# algebra



# Number



**Coming From Key Stage 2...**

Place value, negative numbers, factors, multiples, primes  
fractions, decimals, percentages

Number

# Shape

# Statistics

Degree: Mathematical Biology, Student T-test, Central Limit Theorem

$$P(X = x) = \frac{\lambda^x e^{-\lambda}}{x!}$$

Poisson  
Probability distributions

Further Maths

A-Level

YEAR 11

YEAR 10

YEAR 9

YEAR 8

YEAR 7

$$b_1 = \frac{\sum xy - \frac{(\sum x)(\sum y)}{n}}{\sum x^2 - \frac{(\sum x)^2}{n}}$$

$${}_n C_r = \frac{n!}{(n-r)!r!}$$

Hypothesis testing

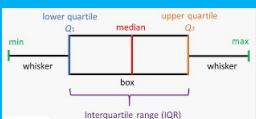
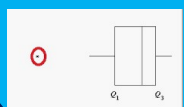
Probability

Standard deviation

Data presentation and interpretation

Histograms

Mean



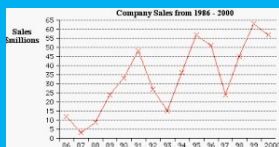
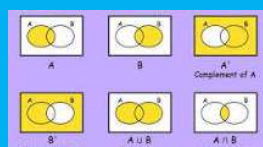
Box plots

Cumulative frequency

Quartiles

Median

UQ, LQ, IQR



Experimental probability

Combinations

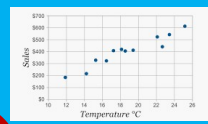
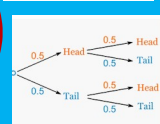
Venn diagrams

Time series graphs

Conditional probabilities

Venn diagrams set notation

Theoretical probability



|   |   |   |    |    |    |
|---|---|---|----|----|----|
| 1 | 2 | 3 | 4  | 5  | 6  |
| 2 | 3 | 4 | 5  | 6  | 7  |
| 3 | 4 | 5 | 6  | 7  | 8  |
| 4 | 5 | 6 | 7  | 8  | 9  |
| 5 | 6 | 7 | 8  | 9  | 10 |
| 6 | 7 | 8 | 9  | 10 | 11 |
| 7 | 8 | 9 | 10 | 11 | 12 |

Tree Diagrams

Independent events  
Mutually exclusive events

Averages from table

YEAR 8

Scatter diagram

Sample spaces

$$P(A \text{ and } B) = P(A) \times P(B)$$

Inequalities

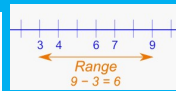
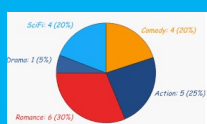
Relative frequency

Mean

Range



| Categories | Tallies | Total |
|------------|---------|-------|
| Walk       |         | 7     |
| Bike       |         | 3     |
| Car        |         | 4     |
| Bus        |         | 12    |



Types of data

Tally

Frequency tables

Bar charts

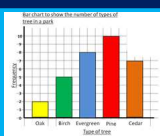
Pictograms

Pie charts

Comparing data sets

Averages

| Colour | Number of Smarties | Frequency |
|--------|--------------------|-----------|
| Green  | 7                  | 7         |
| Orange | 8                  | 8         |
| Blue   | 5                  | 5         |
| Pink   | 6                  | 6         |
| Yellow | 11                 | 11        |
| Red    | 8                  | 8         |
| Purple | 7                  | 7         |
| Brown  | 3                  | 3         |



Comparative bar charts

Mode Median  
2,4,5,5,4,5  
→ 2,4,4,5,5,5  
1 2 3  
MODE = 5

Coming From Key Stage 2...  
Bar charts, averages, tally charts, pie charts

Data