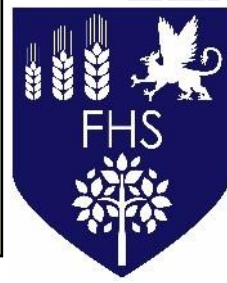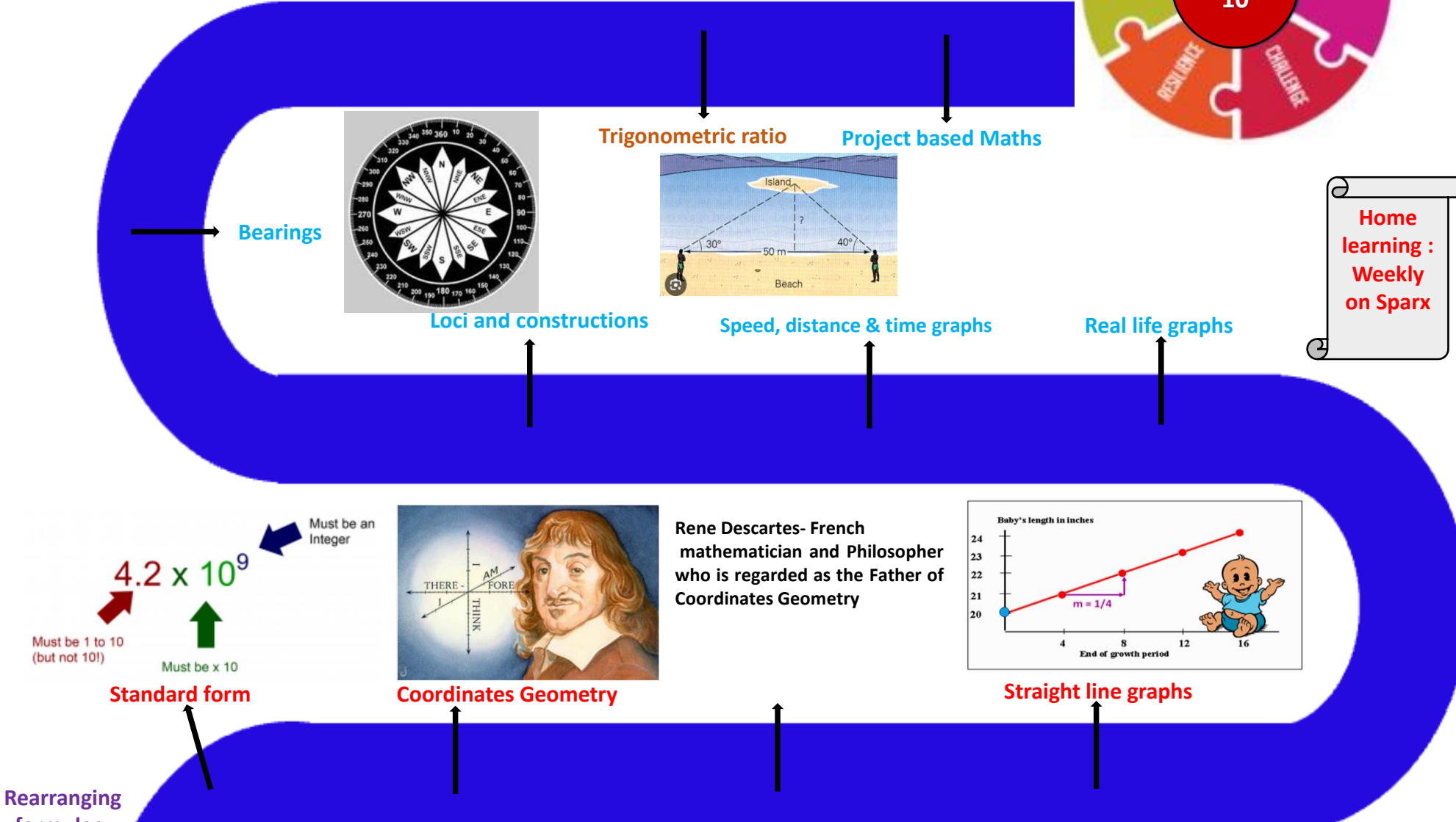# Year 9

- **Links to careers/SMSC/Personal Development:**
- Pythagoras was a Greek philosopher who made important developments in Mathematics, astronomy, and the theory of Music. The theorem now known as Pythagoras's theorem was known to the Babylonians 1000 years earlier but he may have been the first to prove it.
- Celebrate Pi day and show appreciation to Maths and Science
- UKMCT challenge for year 9 to develop problem solving skills
- World numeracy day to promote the love and appreciation of numeracy skills to use in daily life
- Maths related careers when specific topic is taught

FHS

YEAR 10
INCLUSION, CORE, RESPECT, CHALLENGE, RESILIENCE, PARTNERSHIP

Trigonometric ratio

Project based Maths

Bearings

Home learning : Weekly on Sparx

Loci and constructions

Speed, distance & time graphs

Real life graphs

4.2×10^9

Must be an Integer

Must be 1 to 10 (but not 10!)

Must be × 10

Standard form

Coordinates Geometry

THERE - I - AM - FORE - THINK

Rene Descartes- French mathematician and Philosopher who is regarded as the Father of Coordinates Geometry

Baby's length in inches

m = 1/4

End of growth period

Straight line graphs

Rearranging formulae

Assessments
- **Half Termly progress check**
- **End of term assessments**

MULTIPLYING BINOMIALS

AREA MODEL
x - 5
6x | 6x² | -30x
+12 | 12x | -60

FOIL
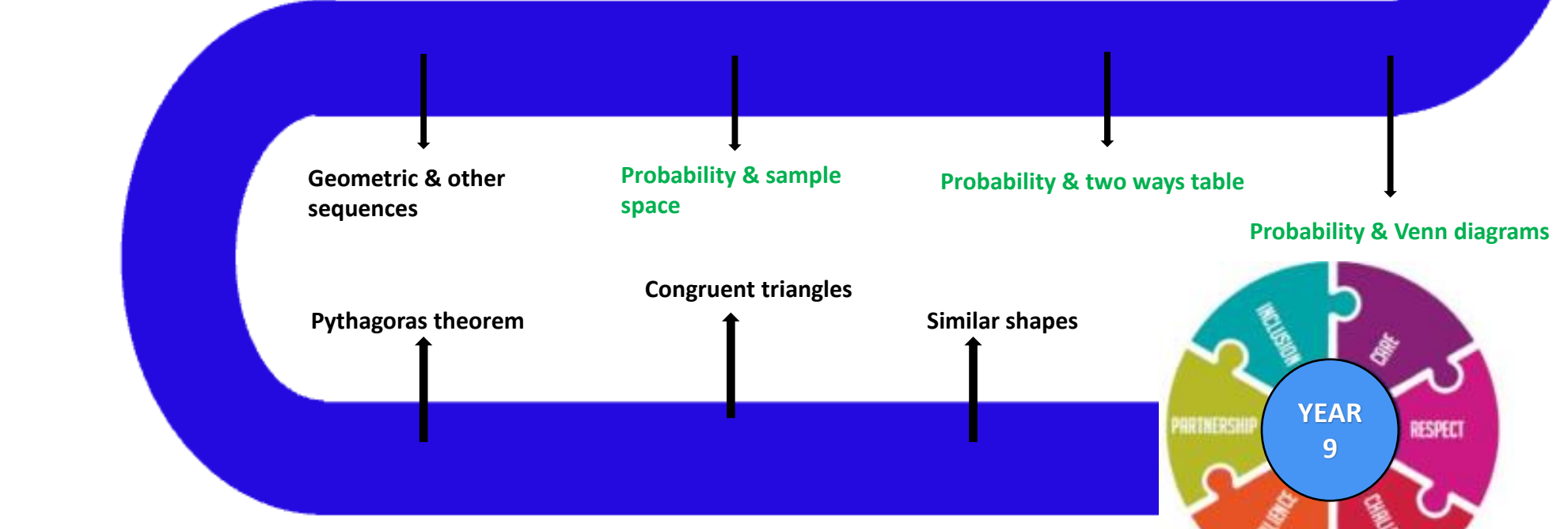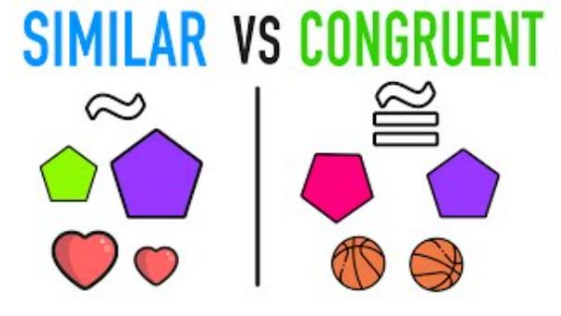$(8 - 5x)(8 - 5x)$
$25x^2 - 80x + 64$

Solving quadratics

Factorising quadratics

Difference of two squares

Product of two Binomials

Enrichment
- **TTROCK Stars**
- **Chess Club**

h=hypotenuse

Area = h²

Area = a²

Area = b²
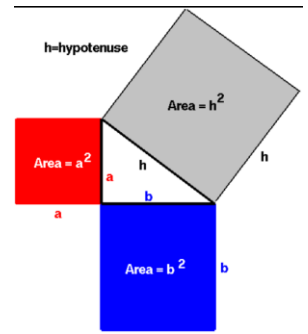
The Pythagorean theorem
Although Pythagoras is credited with the famous theorem, it is likely that the Babylonians knew the result for certain specific triangles at least a millennium earlier than Pythagoras. It is not known how the Greeks originally demonstrated the proof of the Pythagorean Theorem.

SIMILAR VS CONGRUENT

Geometric & other sequences

Probability & sample space

Probability & two ways table

Probability & Venn diagrams

Congruent triangles

Pythagoras theorem

Similar shapes

YEAR 9
INCLUSION, CORE, RESPECT, CHALLENGE, RESILIENCE, PARTNERSHIP

Year 9 learning summary: Rationale

In Year 9 we will explore the following:
- identify if shapes are similar or congruent, and to think about what can change and what has to stay the same for these properties to hold
- while learning about an important theorem in mathematics, such as Pythagoras' theorem, we will go beyond and use it in real life scenarios
- introduction to probability and words that are associated with probability such impossible, likelihood and certain
- on how probability is used in many aspects of their daily lives, from sporting events to weather reports. However, students may feel that their lived experiences do not reflect calculated mathematical likelihoods
- consolidate, secure and deepen their understanding of sequences and patterns and will progress to describing any term directly in relation to its position in the sequence
- In Year 7 autumn term, students used the distributive law to expand a single term over a binomial. Here we will use the same law to work with pairs of binomials and expand two or more brackets
- expansion is a generalisation of the familiar 'grid method' for multiplication
- develop the use of standard form and will deepen their understanding of the different ways that numbers can be expressed and will become more proficient in changing from one form to another
- the connections between equations of lines and their corresponding graphs, including those presented in a non-standard form, such as ax + by = c, as well as the more standard y = mx + c
- how similarity and scale factors are linked it to trigonometric functions and the fundamental ratios of $\sin \theta = opp/hyp$, $\cos \theta = adj/hyp$ and $\tan \theta = opp/adj$