The Walton Baccalaureate

You must complete a project (listed at the end of the document) and 2 other tasks.

Mathematics

Criteria for Baccalaureate recommendation in Y7

1. Resilience - do additional work on a topic that you have performed badly on

2. Take a photograph of something mathematically interesting and explain why it is

3. Research a mathematician

4. Choose a project from the Y7 list

5. Submit a solution to nrich.maths.org

Criteria for Baccalaureate recommendation in Y8

1. Resilience - do additional work on a topic that you have performed badly on

2. Create a presentation on an area of mathematics (can be in a group)

3. Find something at home that uses mathematics and explain how

4. Choose a project from the Y8 list

5. Submit a solution to nrich.maths.org

Criteria for Baccalaureate recommendation in Y9 and 10

1. Resilience - do additional work on a topic that you have performed badly on

2. Create a revision guide for a topic for use by younger students

3. Collect and present data on an area of Stafford

4. Choose a project from the Y9 list

5. Submit a solution to nrich.maths.org

**PROJECTS FOR MATHEMATICS**

**YEAR 7**

* Pick only **one** project to complete
* **Do not** copy large chunks of text from the internet – we will be able to tell
* How you present your work is up to you

**The projects:**

* 1. Pascal’s triangle
  2. A light year
  3. Fibonacci numbers
  4. Triangular numbers
  5. Amicable and automorphic numbers
  6. Interesting number patterns
  7. The golden ratio/rectangle
  8. The ellipse
  9. Factorials
  10. Benjamin Franklin’s magic square and others
  11. Perfect numbers
  12. Goldbach’s conjecture
  13. Navigation Instruments
  14. The Soma cube
  15. The contributions of women/men to the development of mathematics eg

Thales, Leonhard Euler, Hypatia, John Napier, Ada Lovelace or any other

* 1. Lucas numbers
  2. Ahmes papyrus
  3. The Greek alphabet
  4. The supercube or tesseract
  5. ‘Brain games’ – puzzles and problems

**PROJECTS FOR MATHEMATICS**

**YEAR 8**

* + Pick only **one** project to complete
  + **Do not** copy large chunks of text from the internet – we will be able to tell
  + How you present your work is up to you

**The projects:**

* 1. The history of ∞ or 0
  2. The radian (or circular measure)
  3. Tide charts
  4. The 24 hour clock
  5. Homophones
  6. A mathematical crossword (8x8)
  7. Latin squares
  8. Schlegel diagrams
  9. The geometry of logos
  10. Geometry of the chambered nautilus
  11. Large numbers – googol, googolplex
  12. Euler’s formula
  13. Networks
  14. Spirograph patterns
  15. Coins, currencies and exchange rates
  16. Mathematics in advertising
  17. The cycloid
  18. Tangrams
  19. Perspective (look up Albrecht Durer)
  20. Snowflake geometry

**PROJECTS FOR MATHEMATICS**

**YEAR 9 and 10**

1. Pick only **one** project to complete
2. **Do not** copy large chunks of text from the internet – we will be able to tell
3. How you present your work is up to you

**The projects:**

* 1. Polynomials
  2. Matrices
  3. Optical Illusions
  4. Origami models
  5. Mathematics of chance and probability (Lotto, dice etc)
  6. The census and its uses
  7. Orienteering basics – map reading, symbols, compass
  8. Simple spirolaterals
  9. Polar coordinates
  10. Modular arithmetic
  11. Curves of pursuit
  12. Escher’s work
  13. Topology
  14. Geometry on a billiard table
  15. Mathematics in medicine
  16. Mathematics in music or art
  17. Mathematics in PE/sport
  18. Create a poem or song with a mathematical theme
  19. Codes – sign language, semaphore, Braille, Morse code
  20. The slide rule, abacus, soroban