Cryptography

Course Description

Study the history of cryptography, from the elementary approaches of the Greeks to the advanced techniques used in modern internet security.Construct simple early cipher devices.
Create encryption devices.Convert information from an easily understood form into a code that cannot be easily read or broken.Break the encrypted messages using various techniques.Study the mathematical theory behind the substitution codes and other more advanced techniques.

Learning Outcomes	Compatible Courses
- I understand the issues behind encoding and decoding messages. - I can construct simple cipher devices for encoding messages. - I can create encryption devices. - I can apply Frequency Analysis to break the substitution code. - I can apply Number Theory to explain the theory behind modern encryption technologies.	The problem solving techniques used in this course are often complex and abstract. Whilst they do not always use mathematical techniques, they do employ the same level of sophistication as more complex mathematical strategies. They would suit students who are hoping to study Higher level maths at IB.
The 6 C's - Creative and critical thinking: - I can use my ideas to achieve an outcome (e.g. produce a creative substitution cipher that is original and unusual) - I can make connections between different ideas (e.g. apply a range of appropriate strategies to decode a piece of cryptogram) - I can explain my thinking (e.g. to evaluate the strength and weakness of a cryptological method) - Capacity to learn: - I can organise my resources to maximise learning - I show perseverance and can focus when working through challenging mathematical concepts and decoding	**Future Study** .

complex cryptogram; ○ I know where to to if I need help to solve a problem.	

Student comment

Teacher	Semester	Block (A=Years 9-11 B=Years 10-11)
Matt Fowler	1	B