CODEBUSTERS B/C

2025 Season

WHAT IS CODEBUSTER?

- Students work in teams of 3 to "cryptanalyze and decode encrypted messages using cryptanalysis techniques for historical and modern advanced ciphers."
  - Students may only bring writing materials and a 4- or 5-function calculator (no scientific calculators)

  - Secret codes are fun and accessible to all levels of students
  - Does not require background knowledge
  - More "practice" event than a "study" event
  - Pattern recognition and interest in language/math/analysis are helpful

CHANGES FROM LAST YEAR

No substantive changes this year, just tightening up some rules!

- One reference sheet per team member is required this year
- Word Baconians require a 4-letter crib
- Crib locations are to be provided for cryptanalysis problems except for the Complete Columnar
- No free errors for Cryptarithms

Disclaimer: This year's rules and the corresponding FAQ take precedence over anything in this presentation.

COACHING FOR SUCCESS

- Practice – the more, the better!
- Split the test
- Learn the Morse Code, Baconian, and Atbash (for Div. B) alphabets
- Take advantage of the "two free errors," but be careful!
- Learn through practice when to cut a cipher loose
- Look for the Special Bonus questions
- Take advantage of the K1/K2 alphabets

CODEBUSTERS B – COACHING STRATEGY

1. Aristocrat
2. Caesar and Atbash
3. Porta
4. Letter & Sequence Baconians
5. Aristocrat K1/K2 Keywords
6. Patristocrat
7. Fractionated Morse
8. Nihilist Substitution
9. Word Baconian
10. Affine
11. Complete Columnar
12. Cryptarithm
13. Xenocrypt

CODEBUSTERS C – COACHING STRATEGY

1. Aristocrat
2. Porta
3. Letter & Sequence Baconians
4. Aristocrat K1/K2 Keywords
5. Patristocrat
6. Fractionated Morse
7. Nihilist Substitution
8. Word Baconian
9. Hill 2x2
10. Complete Columnar
11. Cryptarithm
12. Xenocrypt
13. Hill 3x3

SCORING

- High score wins. Final Score = Exam Score + Timing Bonus + Special Bonus
- Timing Bonus = 2 x (600 – number of seconds)
- Special Bonus: One solved = 150 points, Two solved = 400 points, Three solved = 750 points

RESOURCES

- Codebusters Overview document (100 pages of resources!)
- https://toebes.com/codebusters/ Test Generation tools
  - Overall instructions on how to use the tool: https://youtu.be/pcz_3ql8ebM
  - Codebusters YouTube channel covering features of the tools and implementing each cipher type: https://www.youtube.com/@Codebusters-sciol
- Other sources: phone apps, websites, YouTube