

## ***Cryptography Assignment***

### *Directions:*

1. Choose a partner to work on this assignment with. By agreeing to work with this partner, you both have accepted to receive the same grade.
2. Mutually decide on a school appropriate, original message of at least 8 words to encrypt. Include spaces in your message. Your message must be approved by Mr. Mellina before proceeding.
3. Apply a numeric shift to the plaintext after the number has been assigned to each letter.
4. Use an original 4x4 encoding matrix that satisfies the conditions of an encoding matrix to encrypt the plaintext.
5. All work for steps 2-4 needs to be handwritten via *Notability* (or by hand) on the “CREATE YOUR OWN MESSAGE WORK SPACE” worksheet. You can export this page and print it out to be turned in when the assignment is due.
6. Once all of the work has been completed and documented, you will edit the “Matrix Coding Activity” word document in preparation to hand to another group when the assignment is due. The only page you are editing and printing out to be turned in is the “CIPHERTEXT WORKSHEET FINAL DRAFT” worksheet.
7. On both worksheets, please encrypt your first name and last initial with a shift. Indicate the shift.
8. On the day the assignment is due, you are bringing in the following:
  - A hand-annotated “CREATE YOUR OWN MESSAGE WORK SPACE” worksheet. This is your *answer key*.
  - A typed and edited “CIPHERTEXT WORKSHEET FINAL DRAFT” worksheet. This is the worksheet that you will be handing to another group to decode.
9. If the decoders are unable to decode the message encrypted, a new message will be provided to decode.

Name of Creator 1 (Ciphertext): \_\_\_\_\_ Date: \_\_\_\_\_

Name of Creator 2 (Ciphertext): \_\_\_\_\_ Period: \_\_\_\_\_

Caesar Cipher with Shift \_\_\_\_\_

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**CREATE YOUR OWN MESSAGE WORK SPACE**

Create your own ciphertext with a shift in the alphabet and provide a 4x4 encoding matrix to decipher. **All ciphertexts must be a school appropriate sentence of at least 8 words.**

Message (Plaintext): \_\_\_\_\_

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Encoding Matrix with shift \_\_\_\_\_:

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Ciphertext:

**CIPHERTEXT WORKSHEET FINAL DRAFT**

Name of Creator 1 (Ciphertext): \_\_\_\_\_ Date: \_\_\_\_\_

Name of Creator 2 (Ciphertext): \_\_\_\_\_ Period: \_\_\_\_\_

*Caesar Cipher with Shift* \_\_\_\_\_

Name of Decoder 1 (Ciphertext): \_\_\_\_\_

Name of Decoder 1 (Ciphertext): \_\_\_\_\_

*Caesar Cipher with Shift* \_\_\_\_\_

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*Ciphertext:*

*Encoding Matrix with shift* \_\_\_\_\_:

**Message:** \_\_\_\_\_