

Substitution Cipher Activity

Name _____

Encrypt the following message with the given key. Each letter of the alphabet has been swapped with another letter.

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| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| L | Q | W | B | T | N | Z | H | V | U | C | S | F | M | I | A | K | X | P | Y | J | R | E | G | D | O |

“Appear weak when you are strong, and strong when you are weak.” – Sun Tzu

Decrypt the following message with the given key.

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| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| Z | D | Y | B | S | I | N | C | W | G | K | L | T | H | P | E | M | F | A | U | O | R | V | Q | X | J |

“Wu wa z ufouc ohwrsfzllx zykhpvlsbnsb, uczu z awhnls tzh wh epaasaawph pi z nppb ipfuohs, toau ds wh vzhu pi z vwis.” – Gzhs Zoash

The key for the following message is partially unknown, see if you can determine the key and decrypt the message.

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| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| | | | | | U | | | | | | | | | | Q | | | | | | | | | | |

VHRX HX F QGY VPCQ: UJGG QFJJCYV, JGFBO YC

RC - XC QGJAPGV XGAGVVFJO.

Keyword cipher

Remembering a random permutation of the alphabet is a difficult task. To make the substitution cipher easier to use, we will instead start with a keyword and fill in the rest of the alphabet. To create a unique permutation based on a word or phrase.

Keyword: apples

| | | | | | | | | | | | | | | | | | | | | | | | | | |
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| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| A | P | L | E | S | B | C | D | F | G | H | I | J | K | M | N | O | Q | R | T | U | V | W | X | Y | Z |

Notice that the keyword **apples** begins the cipher alphabet, ignoring the duplicate letters. The remaining letters are placed alphabetically.

Encrypt the following message:

Many of life's failures are people who did not realize how close they were to success when they gave up.
- **Thomas A. Edison**

Keyword: Lightbulb

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| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| | | | | | | | | | | | | | | | | | | | | | | | | | |

Create your own keyword and encrypt a message of your choosing. Swap with someone else and decrypt their message.

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| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| | | | | | | | | | | | | | | | | | | | | | | | | | |

Keyword:

Encrypted Message: