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## Code 1: The Caesar Cipher

Julius Caesar used a simple substitution cipher to send messages to his troops. He substituted each letter by the letter that was 3 places further along in the alphabet, so that " $a$ " was replaced with " $D$ ", " $b$ " with " $E$ " and so on.

Part I. Complete the table below to show what each letter is enciphered as using this system.

| Sentence | 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 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Code | D | E | F |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Computer scientists would call 3 the "key" for this cipher. How many different keys are possible? $\qquad$
Part II. Using the Caesar Cipher, decode the following message. Some letters have been decoded to help you:

|  |  |  |  |
| :--- | :--- | :--- | :--- |
| O | R | Y | H |


|  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| F | R | P | S | X | W | H | U |


|  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| V | F | L | H | Q | F | H |


|  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| F | O | D | V | V | H | V |

Part III. Code the following message:


| L | E | A | R | N | I | N | G |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |


| $F$ | $R$ | $O$ | $M$ |
| :---: | :---: | :---: | :---: |
|  |  |  |  |


| $H$ | $O$ | $M$ | $E$ |
| :--- | :--- | :--- | :--- |
|  |  |  |  |

$\qquad$

Part IV. Using the boxes below, write your own secret message and get someone to decode it. You could post it on the Google Classroom and see if someone else can decode it.


|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

