Warm-Up: What do you see?
I. Pigpen Cipher

Here is the picture for the pigpen cipher. We will start by figuring out what symbol corresponds to each letter.

*Example:* What do \( \square \) you think means?

Answer: \( \_ \_ \_ \_ H \_ \_ \_ \_ \_ \_ \)
1. Decode the following messages that were written using the Pigpen cipher:

(a) HAPPY OCTOBER

(b) MATH CIRCLE
2. Encode the following messages using the Pigpen cipher:

G O O D A F T E R N O O N

(b) S M E L L Y C A T
(c) H A P P I N E S S
II. Caesar Cipher/Shift Cipher

To encode a message in Caesar Cipher, “shift” a letter clockwise by a given number of spots.

Example: Encrypt the letter L with a shift of 5. What is the encrypted letter?

Answer: _____Q_______
1. Let’s shift by 5. Encrypt the following letters:

- L
- Q

- X
- C

- B
- G

2. Let’s shift by 3. Encrypt the following letters:

- L
- O

- X
- A

- B
- E
3. Encrypt the word “COOKIE” with a shift of 2. (*Hint: the shift is the same for each letter*).

   EQQMKG

4. Encrypt the word “BAGEL” with a shift of 3.

   EDJHO
5. Let’s shift by 3. Decode the word “JODVV”. (Hint: If you encrypt the word by going clockwise 3 spaces, what direction should you go to decode the message?)

GLASS

6. Let’s shift by 2. Decode the word “UEKPEG”.

SCIENCE
7. There is a shift that exists such that decoding the letter “A” gives the same result as encrypting the letter “A”. What is this shift? What is the letter that results?

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