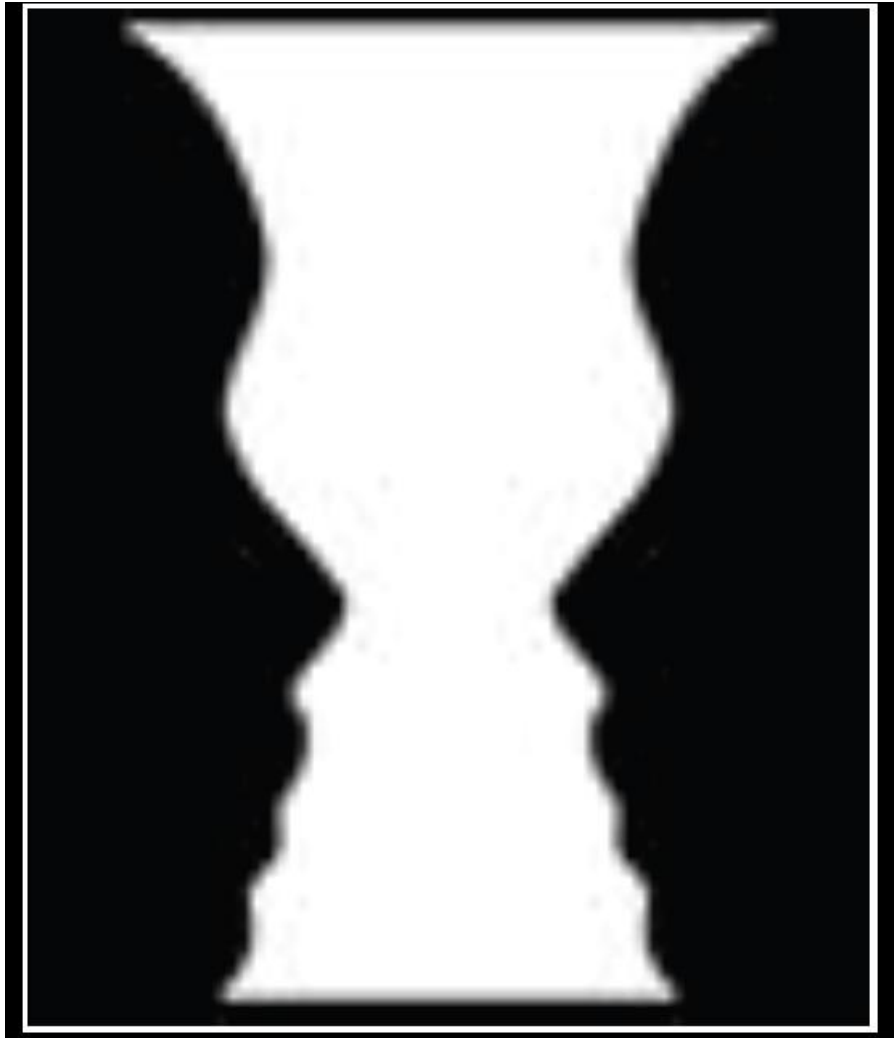


Name \_\_\_\_\_

Date: \_\_\_\_\_

## Warm-Up: What do you see?



# Early Elementary Circle Week 1:

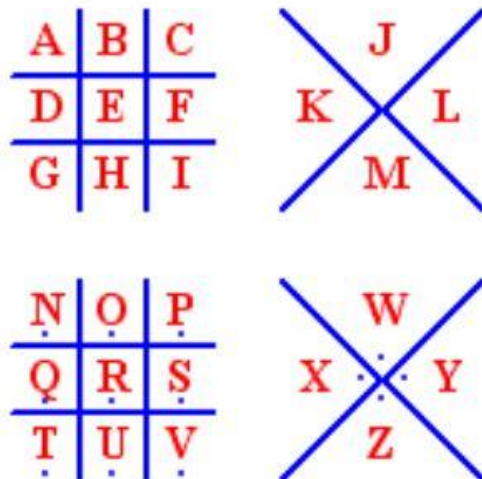
## Introduction to Ciphers

### 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  you think means?*

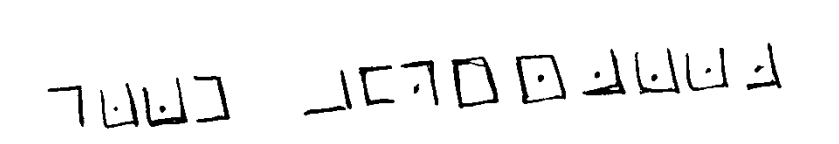
Answer: \_\_\_\_\_ **H** \_\_\_\_\_





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

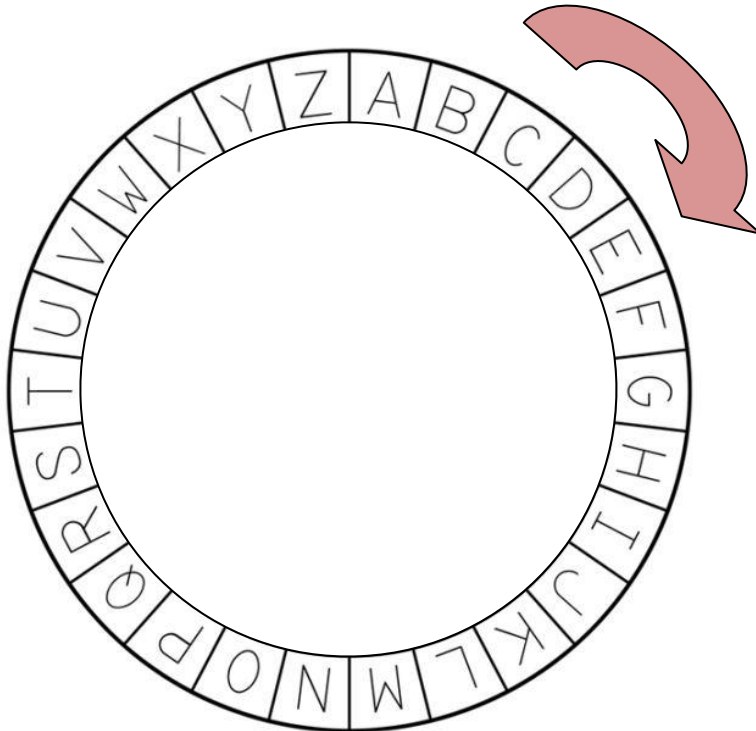
□∧□<<< L J 7

(c) H A P P I N E S S

□ J L L Γ Δ □ □ □

## 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 "UEKGPEG".

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?

13; N

