



**Elective Virtual Learning**

# **6th Grade Intro to Gateways**

**Intro to Cryptology Through Micro:it**

**May 12, 2020**



7th & 8th Grade Multimedia  
Lesson: May 12, 2020

**Objective/Learning Target:**  
**I can develop my understanding of cryptography,  
encryption and ciphers.**

# Warm-Up

## Quick Write

What can you recall about cryptography?

What can you recall about ciphers?

What is a Caesar cipher?

## Did you get these answers to the previous Ciphers?

Pigpen cipher (substitution)

Computing is Great

The Caesar cipher (shift)

Stay at Home

*Do you know how much the shift was?*

*It was a 7 shift. It is a stronger cipher when you don't know the shift.*



# Warm-Up

## Did you create your own Cypher?

Did you Swap your message with someone (without the cipher)

Did they CRACK your code or in other words decode your cipher?

Was it too easy or too difficult for them?

Can you crack this code?

1	2	3	4	5	6	7	8	9	10	11	12	13
A	B	C	D	E	F	G	H	I	J	K	L	M
26	25	24	23	22	21	20	19	18	17	16	15	14
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

21 9 16 20 8 7 22 1 4 5 22 25 3 11 21

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## Lesson Introduction/Background Information:

Did you crack the code to read “sixth grade rocks”?

Sometimes it is easier to crack a code when you are following the code guide, but the real power is when

- The code is more complex
- It is harder to determine the code guide (and of course if you don't have a code guide).

Today you are going to create a Caesar Cipher. If you want to learn more about the Caesar Cipher scan through this short webpage on the logical thinking of the [Caesar Cipher](#). It helps to understand how others were able to crack the codes.

You will:

1. create and use a paper-based Caesar cipher to encrypt and decrypt messages
2. use logical reasoning to write algorithms to encrypt and decrypt messages using a Caesar cipher
3. test and debug algorithms effectively

Materials you will want to look for are:

- Card, heavy paper, or card stock (anything close to this you can find in your house)
- Scissors
- Something to attach 2 pieces of paper, card etc. together such as fasteners, paper clips you can bend out of shape, button, etc you will only need one or two of these.

The next slides will give you instructions. Download a paper copy & print it [HERE](#)

## Practice:

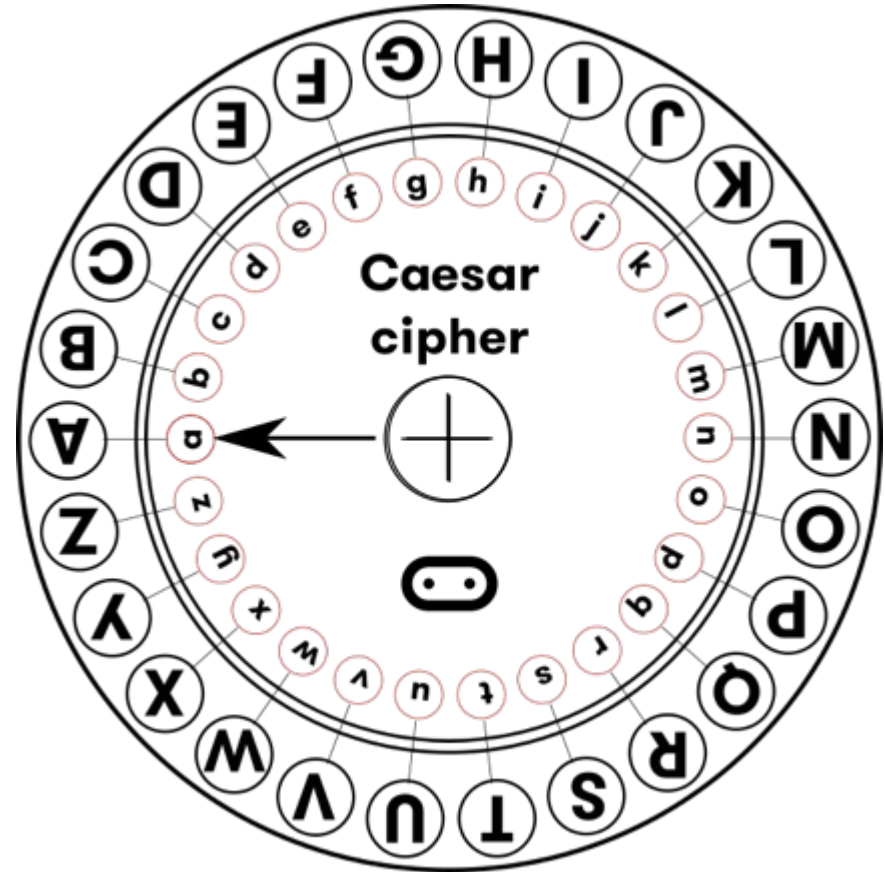
### Creating a Caesar cipher

Your task A:

1. Cut out two circles from card, one smaller than the other. Download the paper copy & print it [HERE](#) or you can make it on your own.
2. Put the smaller circle on top of the larger circle like it's shown to the right
3. Use a split pin through the centre of both circles to secure them together.
4. Line them up, then move the top (smaller) circles round by 3 letters.
5. You have created a Caesar cipher.
6. Note: while Caesar used a 3 letter shift, you can use any number.

Your task B:

1. Decide on the number of letters you will shift (create your cipher).
2. Write your own message in the space below
3. Share it with a partner
4. Can you decipher each other's codes and work out the message?





## Continued Practice:

Learn more about algorithms

[The Importance of Algorithms](#)

## Self-Assessment:

- ❑ How did you use logical reasoning to write your algorithms?
- ❑ What problems did you have and how did you solve them?
- ❑ How could a computer program store the alphabet?
- ❑ How could the Caesar cipher be improved?

Share your Algorithm with someone to test it out & see if they think it would work as code

Email your  
teacher if you  
have questions



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