

CAESARCIPHER.ORG PRINTABLE KIT

Caesar Cipher Wheel Template

A classroom-ready PDF for building a rotating Caesar cipher wheel, practicing shift ciphers, and explaining encryption by hand.



Print first, then cut. Use 100% scale or "Actual Size." Do not use "fit to page." Check the 1-inch scale bars before assembling the disks.

What is included

Large 6-inch wheel, compact student wheel, build guide, verification chart, challenge cards, and blank practice space.

Materials

Cardstock, scissors or craft knife, brass fastener, pencil, and optional laminating sheets for repeated use.

How it works

Rotate the inner alphabet to set a shift. Read plaintext on the outer disk and ciphertext on the inner disk.

Best for

STEM lessons, homeschool activities, escape-room puzzles, cryptography clubs, and beginner codebreaking practice.

Quick start

1. Print pages 2 and 3 for the standard wheel, or page 4 for the compact wheel.
2. Cut along the outside circle of each disk and punch the center marks.
3. Place the inner disk on top and secure it with a brass fastener.
4. For shift +3, rotate the inner disk until D lines up with A on the outer disk.



More cipher tools

Use the full CaesarCipher.org toolkit after the paper activity.

<https://caesarcipher.org>



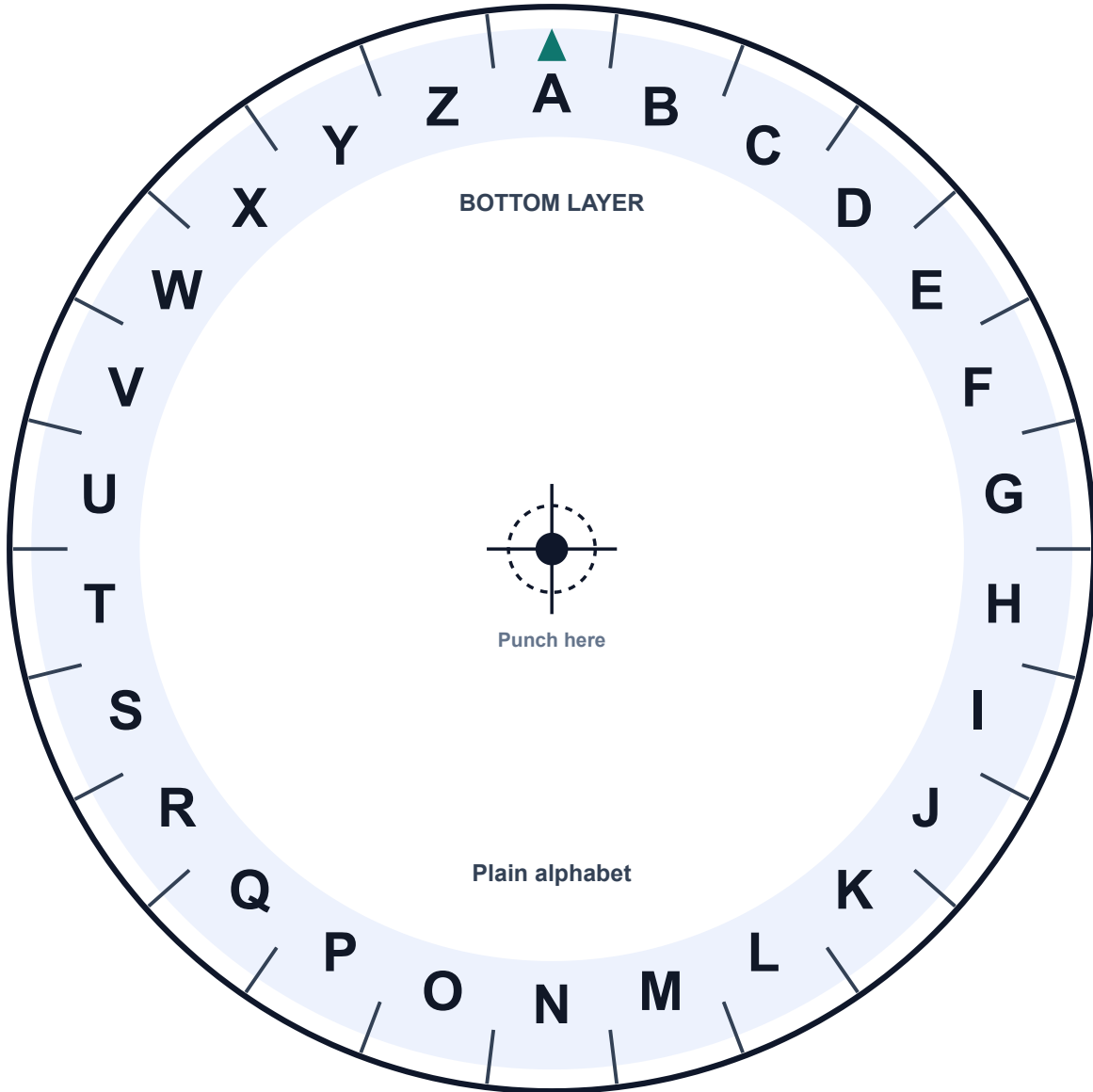
Online Caesar cipher

Check answers, try new shifts, and compare paper vs. digital encryption.

<https://caesarcipher.org/ciphers/caesar>

Standard 6-Inch Outer Disk

Use this larger plaintext disk for classroom demonstrations or durable laminated wheels.



Standard outer disk - cut along the outside line

Scale check:  1 inch

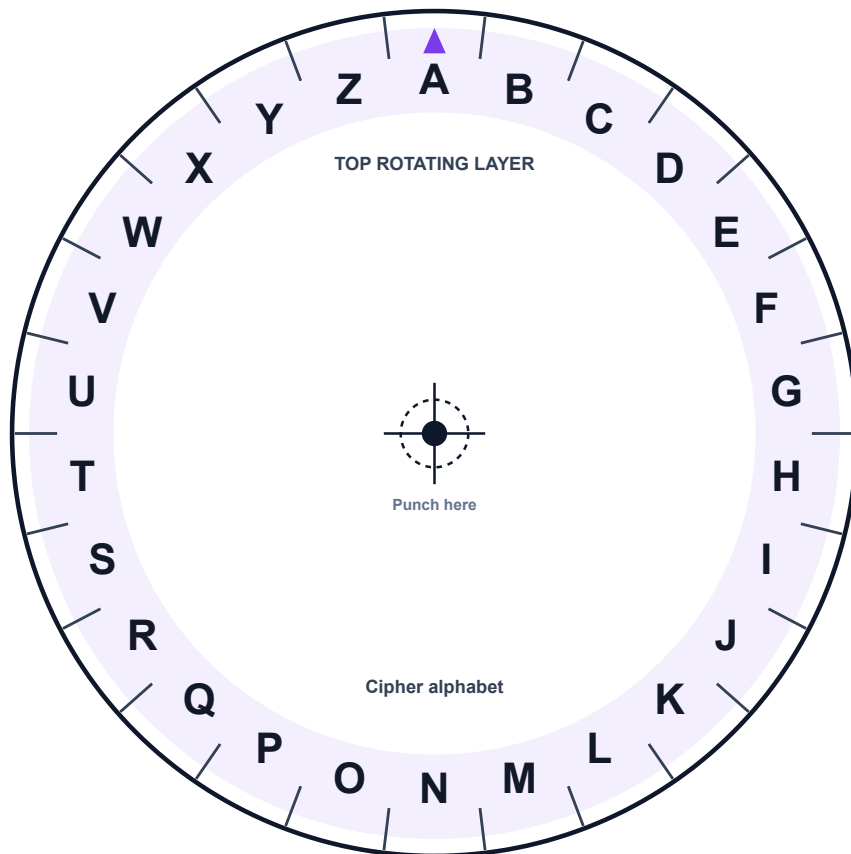
CUT OUTSIDE LINE

PUNCH CENTER MARK

BOTTOM LAYER

Standard Inner Disk

Place this cipher alphabet disk on top of the 6-inch outer disk so it can rotate.



Standard inner disk - place on top

Scale check:  1 inch

CUT OUTSIDE LINE

PUNCH CENTER MARK

TOP ROTATING LAYER

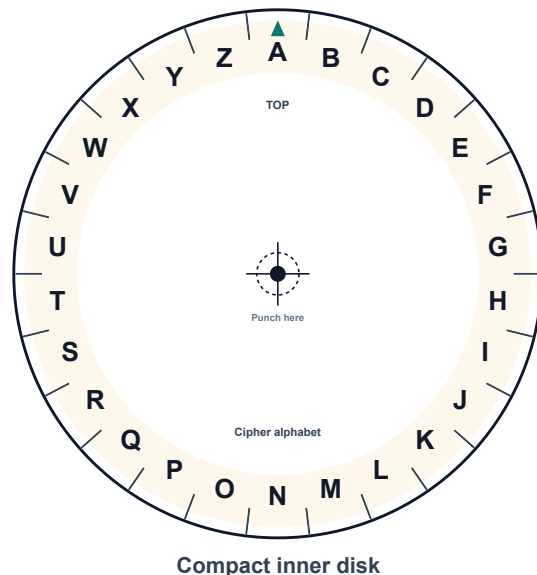
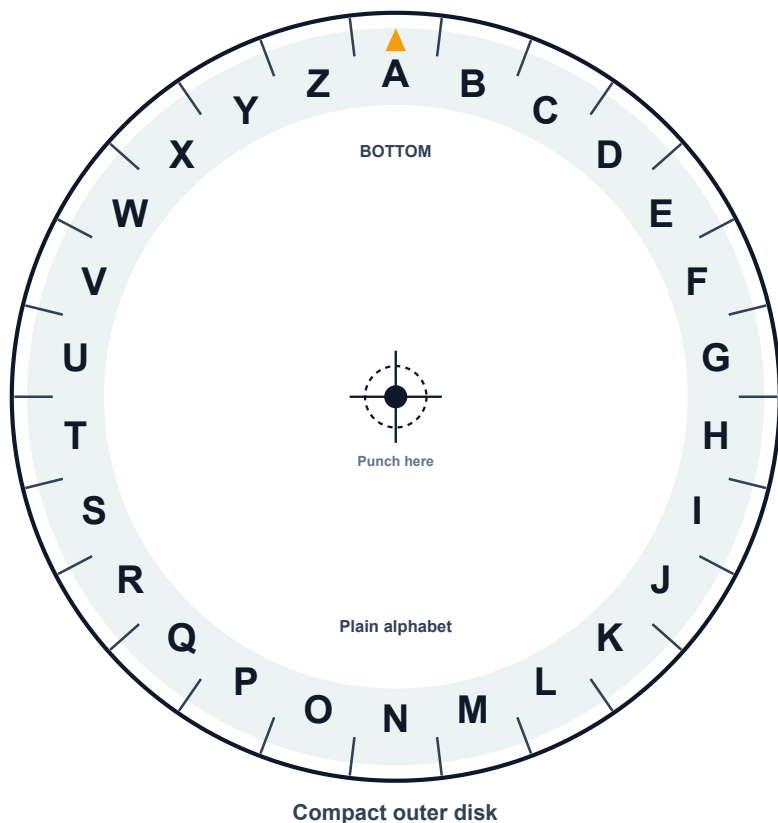
Custom alphabet strip

Use this for keyword alphabets, symbols, or a second language. Write your custom cipher alphabet in the blank boxes.

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

Compact Student Wheel and Challenge Cards

A smaller wheel for notebooks, take-home practice, and quick lesson stations.



Scale check:  1 inch

Challenge 1: Decode
Shift +3: KHOOR ZRUOG

Challenge 2: Decode
Shift +13: FRPERG PBQR

Challenge 3: Encode
Shift +5: MEET AT NOON

Challenge 4: Encode
Shift +7: CLASSROOM SECRET

Classroom tip: Cut the four challenge cards apart and give each group a different shift value.

Build Guide and Student Worksheet

Build steps

1. Print on cardstock at 100% scale.
2. Cut the outer disk and inner disk.
3. Punch the center marks carefully.
4. Stack the disks and add a brass fastener.
5. Rotate gently until letters line up cleanly.

Teacher notes

- Laminate before cutting for repeated use.
- Pre-punch centers for younger students.
- Use shift +13 to introduce ROT13.
- Ask students why there are only 25 useful Caesar shifts.

Verification chart

Task	Wheel setting	Your result	Check
Encrypt ABC	Shift +1		BCD
Encrypt CAESAR	Shift +3		FDHVDU
Decrypt KHOOR	Shift +3		HELLO
Decrypt URYYYB	Shift +13		HELLO

Practice space

Plaintext or ciphertext	Shift	Answer

Challenge answer key

1	HELLO WORLD	2	SECRET CODE
3	RJJY FY STTS	4	JSHZZYVVVT ZLJYLA

15-minute lesson flow

Build wheel: 5 min. Decode challenge cards: 5 min. Pair-share one original message: 5 min.

Discussion prompts

Why are there only 25 useful shifts? Could someone solve this without the wheel? What changes would make it harder?

Troubleshooting: If alignment is off, reprint with scaling disabled and confirm the scale bar measures exactly 1 inch.

Extension Activities and Message Cards

Use this page for peer challenges, escape-room clues, scavenger hunts, and advanced Caesar practice.

Sender card

Shift or key:

Plain message:

Coded message:

Hint to give the solver:

Fold or cut this card, then give only the coded message and hint to another student.

Solver card

Shift clue:

Coded message:

Decoded answer:

Method used:

Try the wheel first. If no shift is given, test common words and all 25 shifts.

Activity ideas

Peer exchange

Each student writes one short message, encrypts it, and swaps with a partner.

Escape room clue

Encrypt a lock code, location, or password. Hide the inner and outer wheels separately.

Break it

Give students a message without the shift and ask them to find readable English.

Advanced extension: rotating shifts

Step	What to do	Example
1	Choose a short keyword and convert letters to shifts with A=0, B=1, C=2.	KEY = 10, 4, 24
2	Change the wheel setting for each letter of the message.	First letter +10, second +4, third +24
3	Tell the receiver the keyword so they can reverse the shifts.	This becomes a simple Vigenere-style extension.



Explore more

Browse ciphers, converters, calculators, and cryptography lessons.

<https://caesarcipher.org>



Verify online

Use the online Caesar tool to check student answers or create more clues.

<https://caesarcipher.org/ciphers/caesar>