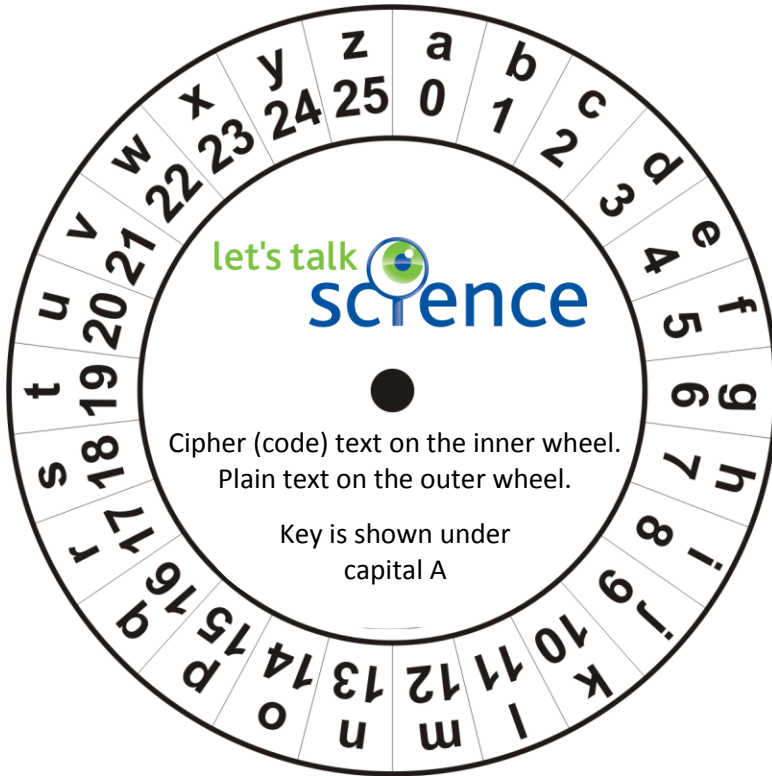


Cryptograph Wheel



Cut out both circles

Place the smaller circle on top of the larger circle. Push a brass fastener through the two black circles.

Spin the top circle so that the key number is shown under the capital A on the outer circle.

For example:

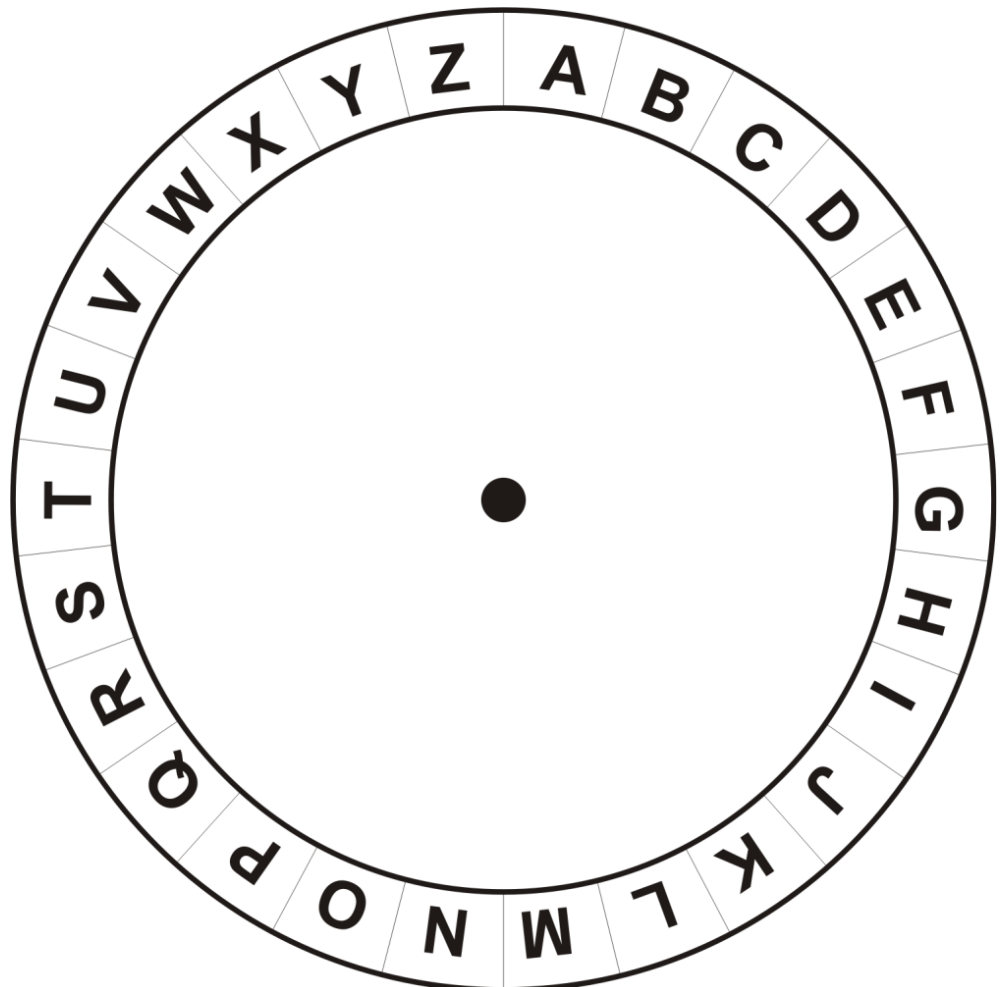
If the key = 9, spin the inner circle so that the j/9 section on the inner wheel lines up with the capital A on the outer wheel.

In this key, "blrnwln" = SCIENCE

Encryption is a way of hiding a message so that it is kept secret from everyone except the person the message is intended for. Computers use complicated encryption techniques to keep data safe, while simple **codes** and **ciphers** can help you send secret messages!

A **Cryptograph wheel** helps to solve a "Caesar" or "shift" cipher. A **shift cipher** is one of the simplest encryption techniques for text, and can easily be solved using a cryptograph wheel, if the key is known.

Assemble and use this cryptograph wheel to send coded messages to your friends!



Cryptograph Wheel: Coding Secret Messages

Instructions:

Encryption is a way of hiding a message so that it is kept secret from everyone except the person the message is intended for. Computers use complicated encryption techniques to keep data safe, while simple codes and ciphers can help you send secret messages!

Follow the instructions on the first page to create your very own cryptograph wheel.
Helpful Hints: If you don't have a brass fastener, try using a thumb tack or even a sharp pencil to stack the two cryptograph layers.

With the key = 9, "blrnwln" = SCIENCE. Can you get that?

*If you don't have a printer look to the next page for alternative instructions! *

Now try your hand at decoding our encrypted science jokes!

Encoded Joke #1: Key = 9

How do scientists freshen their breath?

Coded Answer: frcq ngynar-vrwcbl

Encoded Joke #2: Key = 17

Where do astronauts leave their spaceships?

Coded Answer: rk gribzex dvkvfij!

Hint: the key changed

If you really enjoyed cracking these codes, try to encode your own message or science joke for your family or friends!



Don't have a printer, no problem!

Instructions:

Copy this chart onto a piece of paper and fill in the plain text instead.

Code Key	a 0	b 1	c 2	d 3	e 4	f 5	g 6	h 7	i 8	j 9	k 10	l 11	m 12
Plain Text													

n 13	o 14	p 15	q 16	r 17	s 18	t 19	u 20	v 21	w 22	x 23	y 24	z 25

For Example:

If the **key = 9**, place a capital A under the 9/j.

Continue adding the capitalized plain text in ascending order to fill in the table:

B=10/k, C=11/l, → Y=7/h and Z=8/i

Your table should look like this once filled in:

Code Key	a 0	b 1	c 2	d 3	e 4	f 5	g 6	h 7	i 8	j 9	k 10	l 11	m 12
Plain Text	R	S	T	U	V	W	X	Y	Z	A	B	C	D

n 13	o 14	p 15	q 16	r 17	s 18	t 19	u 20	v 21	w 22	x 23	y 24	z 25
E	F	G	H	I	J	K	L	M	N	O	P	Q

In this key, "blrnwln" = SCIENCE. Can you get that?

If the key changes, copy out this chart again or write the Plain Text in another colour.

Now try your hand at decoding our encrypted science jokes!

