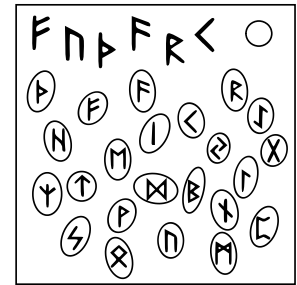


## On the Subject of Elder Futhark

*"Fehu, Uruz, Teiwaz, Hagalaz, Ansuz, Raido, Kenaz"*

Elder Futhark consists of 23 different runes. A sequence of 2 runes is present on the module. Your goal is to press the correct runes in the correct sequence.















- First, identify the names of the runes in the sequence (see **Appendix RAIDO**).
- Generate a keyword for every rune in the sequence (see **Appendix KENAZ**).
- Finally, encrypt the names of the runes using the Vigenère Cipher (see **Appendix WUNJO**).
- The active rune is highlighted in white. Input the encrypted name of the active rune using the 23 runestones (see **Appendix RAIDO**).
- If you click on a wrong runestone, the active rune resets. In order to solve the module, every rune's encrypted name must be successfully entered using the runestones.












### Appendix KENAZ: Determining a keyword

In order to determine the keyword for any particular rune, follow this list top to bottom. In each step where the condition applies, obtain a number and convert it to a letter according to its zero-based alphabetic position (A=0, B=1, C=2 and so on). Drop the fractional part in every division calculation.

Condition	Calculation
The rune's name contains an E or an O	$(\text{last digit of the serial number} + 10) \% 26$
The length of the rune's name is less than 5	$(\text{number of indicators} + \text{number of battery holders}) \% 26$
Always	position of the rune - 1
Always	$(\text{length of the name of the rune} \times 10) \% 26$
Always	$(\text{rune's position} + \text{the length of the name of the rune}) \% 26$

**Appendix RAIDO: Runes, their names and their corresponding letters**

Rune	Letters	Name
	a	“Ansuz”
	b	“Berkana”
	c, k, q	“Kenaz”
	d	“Dagaz”
	e	“Ehwaz”
	f	“Fehu”
	g	“Gebo”
	h	“Hagalaz”
	i	“Isa”
	j	“Jera”
	y	“Eihwaz”
	l	“Laguz”

Rune	Letters	Name
	m	“Mannaz”
	n	“Nauthiz”
	o	“Othila”
	p	“Perthro”
	z	“Algiz”
	r	“Raido”
	s	“Sowulo”
	t	“Teiwaz”
	u	“Uruz”
	v, w	“Wunjo”
	x	“Thurisaz”

**Appendix WUNJO: Vigenère Cipher**

The Vigenère Cipher requires a keyword. Repeat the keyword until it matches in length with the plaintext. Truncate extraneous letters from the end.

In the following table, obtain the first letter of the encrypted word by looking up the plaintext's first letter in the rows and keyword's first letter in the columns.

Repeat this method for the rest of the word.

	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
A	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
B	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	A
C	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B
D	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C
E	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D
F	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E
G	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F
H	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G
I	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H
J	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I
K	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J
L	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K
M	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L
N	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M
O	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N
P	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Q	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
R	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
S	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
T	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
U	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
V	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
W	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
X	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Y	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
Z	Z	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