Resources

JOTA JOTI

2025

Version 3.0

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Caesar Shift Cipher

The Caesar Shift cipher is one of the oldest but simplest ciphers out there. It substitutes one letter for another in the alphabet, corresponding to a specific shift up or down the alphabet.

Assembling your cipher wheel

1. Print out the wheels found on Page 20 and cut them out.
2. Use something (e.g. a pencil/pen) to poke the holes in the middle of both wheels.
3. Place the smaller wheel on top of the larger wheel and use a split pin to connect the two together. Make sure the wheels can rotate freely!

Encrypting a message using the cipher wheel

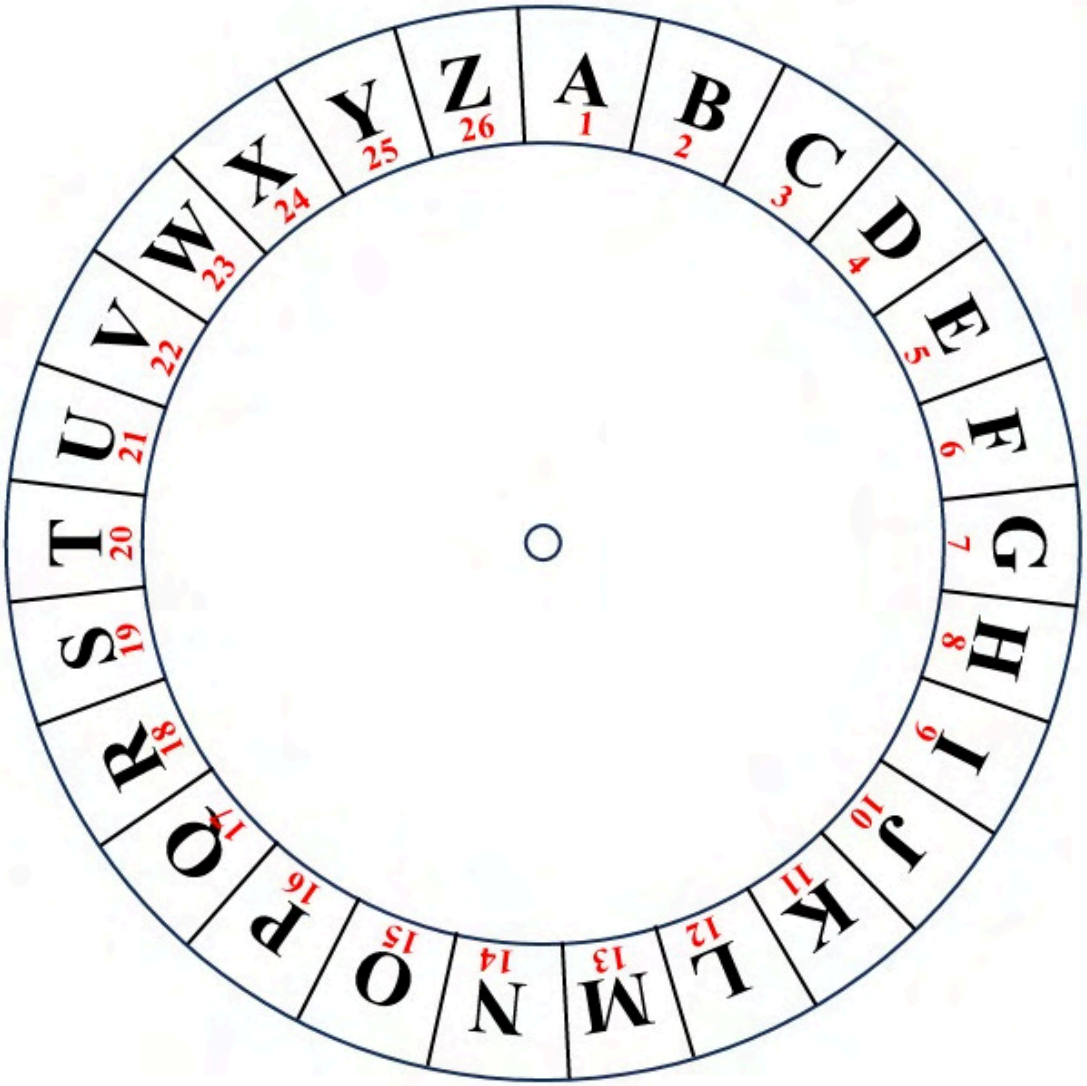
1. Writeoutyourmessagenormally.
2. Pick a number between 1 to 26. This corresponds to the 'new' letter of the alphabet. For example, 1=A, 2=B, 3=C, and so on.
3. Turnthesmallwheeluntilthe'A'onthelargerwheelisalignedwiththechosennumber (e.g. if you picked 25, the 'A' should be aligned with 'Y').
4. Encodeyourmessagebywritingitoutwiththenewlyalignedlettersfromthelarger wheel. For example, HELLO written with 25 is FCNNM.

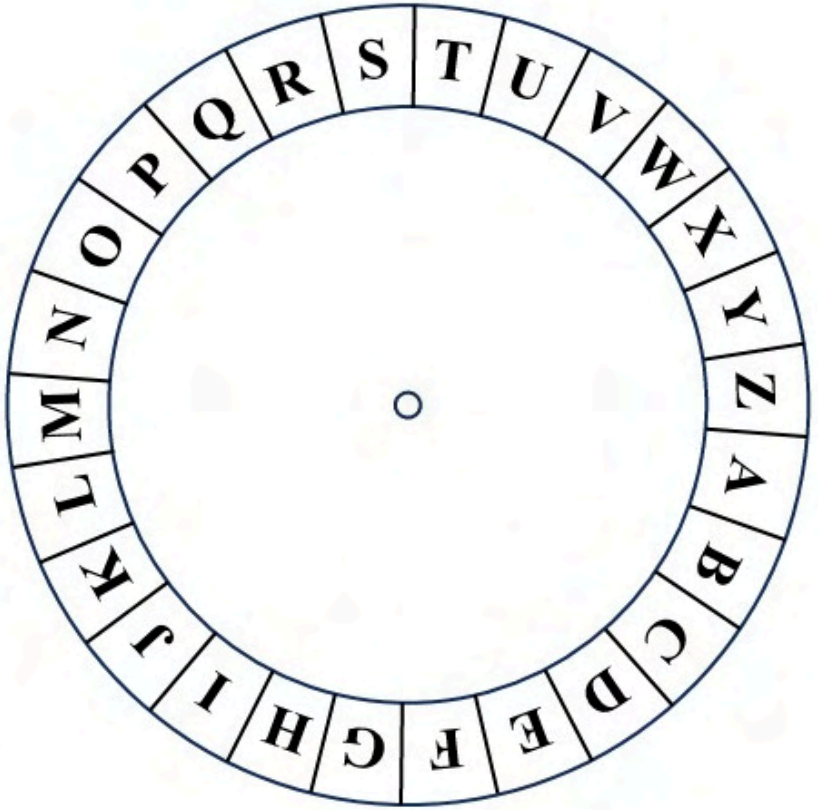
Deciphering a message using the cipher wheel

1. Decipheringstartsinthereverseoftheencryptingprocess.Youwillneedtoknowwhat encoding number was used so you can properly align your cipher wheel. Otherwise, it will take a lot of trial and error!
2. Turnthesmallwheelsothattheencodingnumberisalignedtothecorrectletter.A paperclip may be handy to help make sure the wheels don't move whilst decoding your message.
3. To decode the message, find the letters from the encrypted message on the larger wheel and write down the aligned letter from the smaller wheel. So, the word TQXXA encrypted with the number 13 would be decrypted to say HELLO.

For Bonus Points try to decode the following ciphers

1. CTKTGVDCCPVXKTNDJJE,CTKTGVDCCPATINDJSDLC...
2. HIHSHUJLKKPLATLHUZHJBWJHRLPULHJOOHUK
3. DWSNWLZAKOGJDVSDALLDWTWLLWJLZSFQGMXGMFV AL
4. MAXSHFUBXBLUXABGWRHN
5. UFYRFYQDMSPJCRRCPQ,QMKCRGKCQLGLCJCRRCPQ, ZSR LCTCP DGTC?


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


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

AtBash Cipher

The AtBash cipher encrypts messages by substituting letters with the reverse alphabet. See below for the full code:

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

Encrypting a message using Atbash

1. Write out your message normally.
2. For each letter, swap it to the inverse letter using the table above and write down your, now encrypted, message.

Deciphering a message using Atbash

1. Use the table above to find the inverse letter in your encrypted message.
2. Write it out to decode the text.

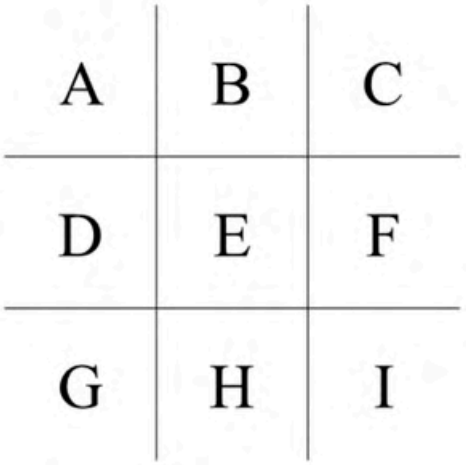
Atbash Ciphers to Decode and Answer

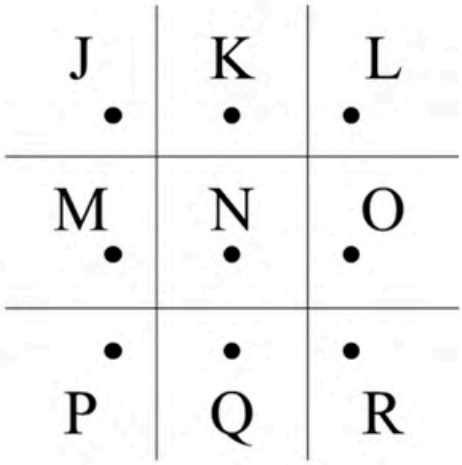
1. HXLFGRMT RH UFM ULI ZOO ZTVH!
2. GSV TFRWV DVMG ULI Z SRPV!
3. DSZG WL BLF XZOO Z YVZI DRGS ML GVVGS?
4. DSZG RH BLFI UZELFIRGV XZNK ULLW?
5. DSZG WL BLF XZOO Z KRT GSZG WLVH PZIZGV?

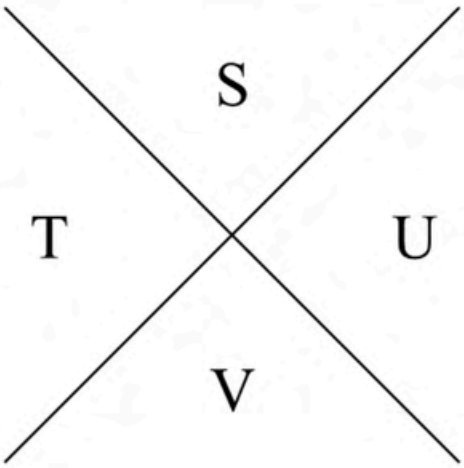
A = Z
B = Y
C = X
D = W
E = V
F = U
G = T
H = S
I = R
J = Q
K = P
L = O
M = N
N = M
O = L
P = K
Q = J
R = I
S = H
T = G
U = F
V = E
W = D
X = C
Y = B
Z = A

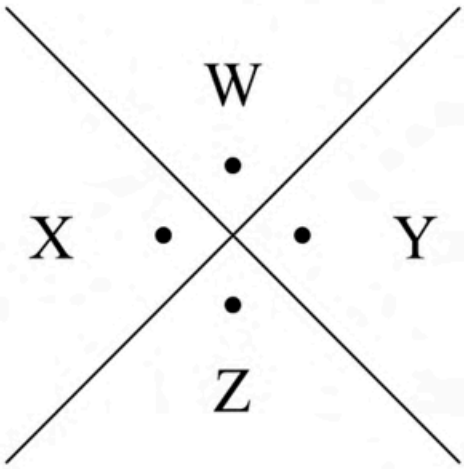
Pigpen Cipher

The Pigpen cipher converts the letters in the encoding message into symbols consisting of a grid with or without dots.









Examples:

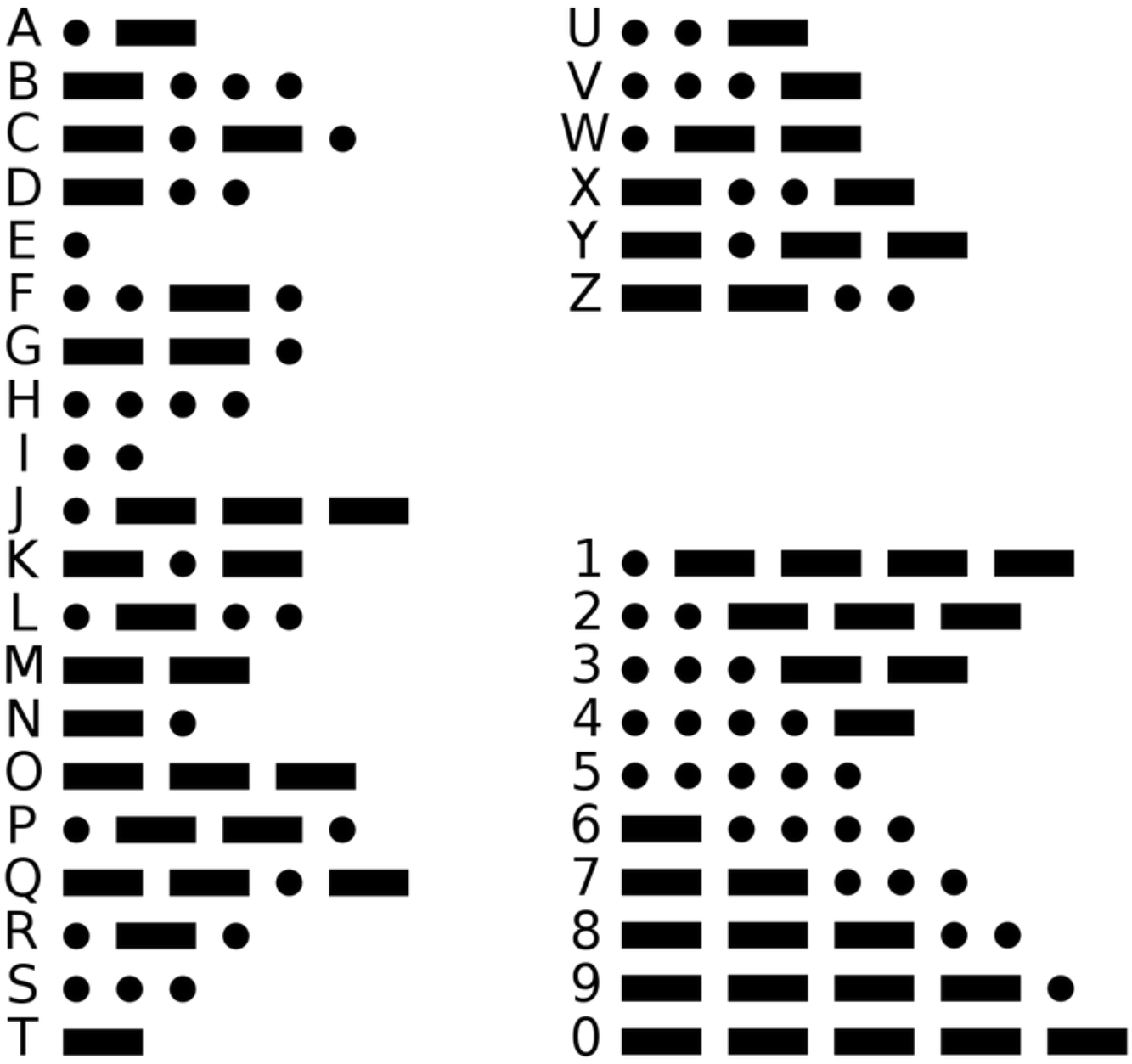
A =  T =  N =  Z = 

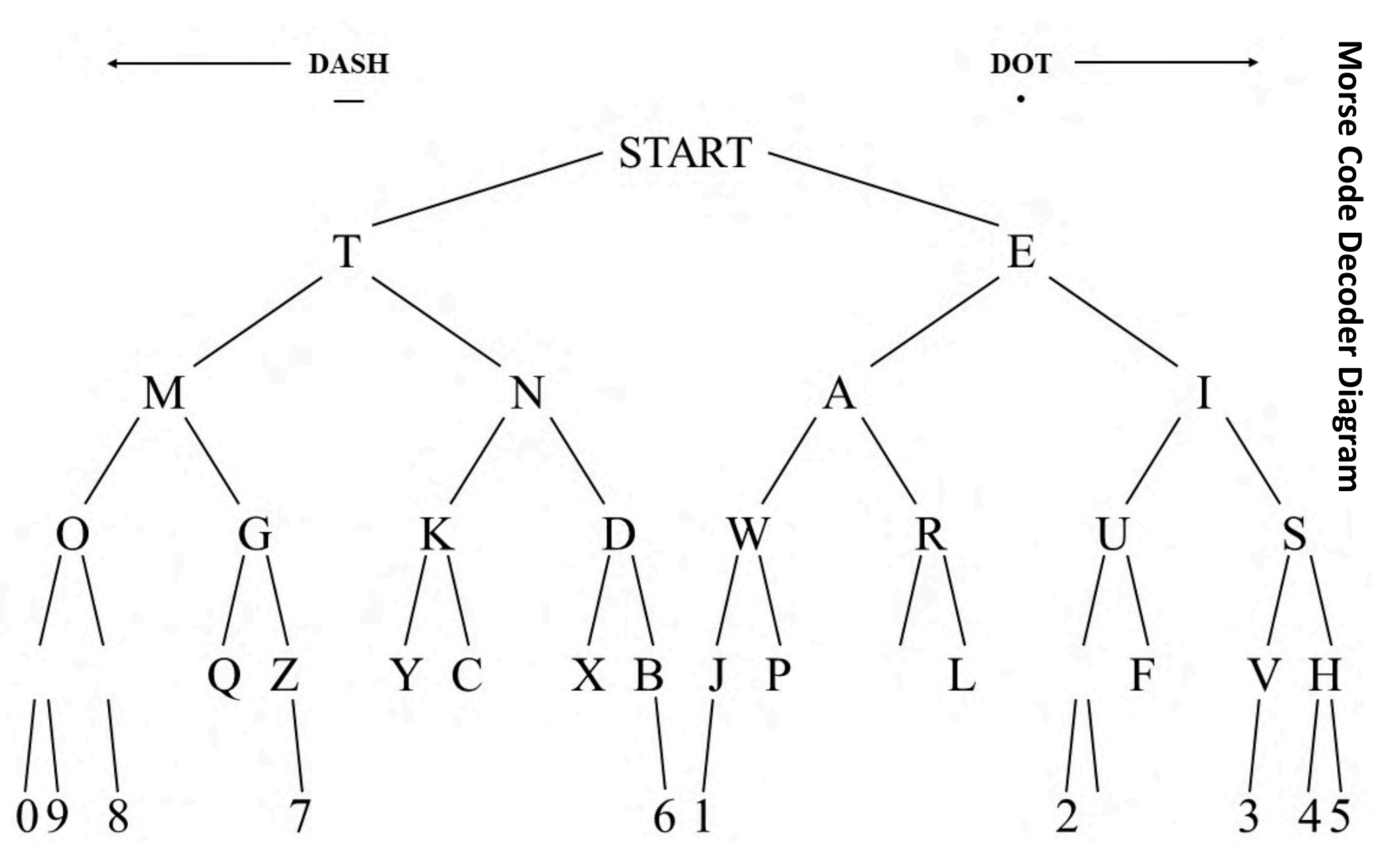
Try to encode your name, your group and favourite colour!

Try to decode:

International Morse Code

1. The length of a dot is one unit.
2. A dash is three units.
3. The space between parts of the same letter is one unit.
4. The space between letters is three units.
5. The space between words is seven units.





Morse Code Decoder Diagram

Phonetic Alphabet

A	Alpha	N	November
B	Bravo	O	Oscar
C	Charlie	P	Papa
D	Delta	Q	Quebec
E	Echo	R	Romeo
F	Foxtrot	S	Sierra
G	Golf	T	Tango
H	Hotel	U	Uniform
I	India	V	Victor
J	Juliet	W	Whiskey
K	Kilo	X	X-Ray
L	Lima	Y	Yankee
M	Mike	Z	Zulu

NATO
phonetic alphabet, codes & signals

The ability to communicate and make yourself understood can make a difference in life-threatening situations – imagine for example that you are trying to alert a search and rescue helicopter of the position of a downed pilot. To ensure clear communication, NATO uses a number of well-known formats which are in general use. NATO standardization agreements enable forces from many nations to communicate in a way that is understood by all.

Some standards can be found in everyday civilian and military life. "Bravo Zulu", typically signalled with naval flags on ships at sea and meaning "well done", is also commonly used in written communication by the military, for example by replying "BZ" to an email.

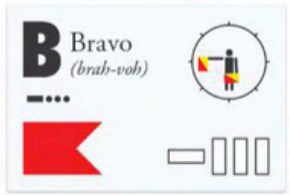
Phonetic alphabet
The NATO alphabet became effective in 1956 and, a few years later, turned into the established universal phonetic alphabet for all military, civilian and amateur radio communications.

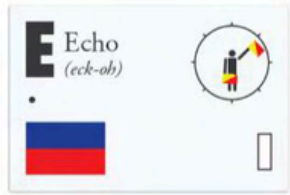
International Morse Code
Morse code transmits text through on-off tones, light-flashes or clicks. It was widely used in the 1890s for early radio communication, before it was possible to transmit voice.

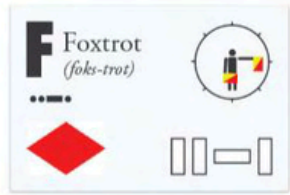
Flaghoist communication
Ships use flags as signals to send out messages to each other. The use of flags, known as flaghoist communication, is a fast and accurate way to send information in daylight.

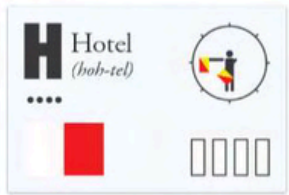
Semaphore
Semaphore is a system in which a person sends information at a distance using hand-held flags – depending on the position of the flags, the message will vary. The signaller holds the flag in different positions that represent letters or numbers.

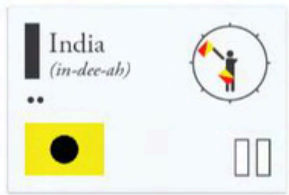
Panel signalling
Panels are visual signals for sending simple messages to an aircraft. Using a limited code, ground forces can send messages to pilots, for example to request medical supplies.

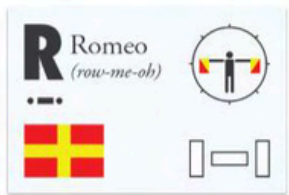












Numbers

More information on NATO's codes, signals and standards can be found on the NATO Standardization Office (NSO) website: http://nso.nato.int/nso/ -- More on the history of the NATO phonetic alphabet: http://www.nato.int/declassified/
This poster can be downloaded at http://www.nato.int/alphabet

Created by Communications Services, Public Diplomacy Division, NATO HQ, Brussels, Belgium -- NATO 2018
Phonetic transcription is based on English pronunciation

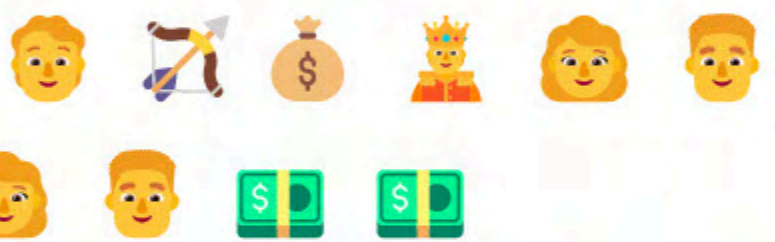
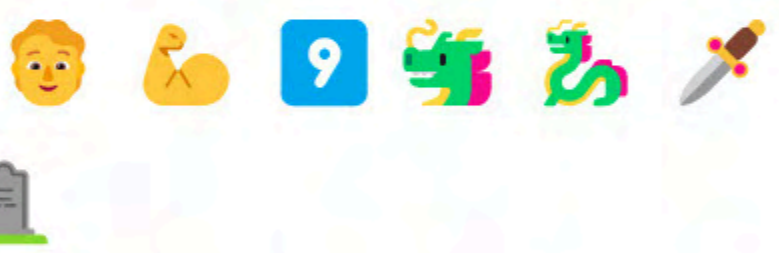
Guess the Saying

1.  
2.  
3.   
4.  
5.  

Guess the Card Game

1.  
2.      
   
3.      
4.   
5.     

Guess the Mythological Character

1. 
2. 
3. 
4. 
5. 

Guess the superhero

1.  
2.     
3.   
4.  
5.   

Guess the Animal

1. 🟡 ⚫  
2.  🍴
3. 🟠 ⚫ 
4.  
5.  - 3  ➡️  

Answer Sheet

Caesar Shift Cipher

Q1. Never gonna give you up, never gonna let you down
Q2. A balanced diet means a cupcake in each hand
Q3. Leave this world a little better than when you found it
Q4. A zombie is behind you
Q5. What has four letters, sometimes nine letters, but never five?

AtBash Cipher

Q1. Scouting is fun for all ages!
Q2. The Guide went for a hike!
Q3. What do you call a bear with no teeth? (A gummy bear)
Q4. WHAT IS YOUR FAVOURITE CAMP FOOD?
Q5. What do you call a pig that does karate? (A pork chop)

Pigpen Cipher

Scouts and Guides learn, lead, serve,
explore, and grow together.

Guess The Emoji

Guess the Phrase

1. Blind as a bat
2. Hold your Horses
3. Early bird catches the worm
4. Break the ice
5. Piece of cake

Guess the card game

1. Exploding kittens
2. Uno
3. Snap
4. Go fish
5. Old Maid

Guess the mythological character

1. Achilles
2. King Arthur
3. Robin Hood
4. Hercules
5. Baba Yaga

Guess the Superhero

1. Aqua Man
2. Superman
3. Black Widow
4. Cat Woman
5. Hawkeye

Guess the Animal

1. Bee
2. Ant Eater
3. Tiger
4. Penguin (Pen-Grin)
5. Dolphin (Doll-Finish, Doll-Fin)