

BASIC SCOUT SKILLS

Signaling projects



A hundred years ago, there were no mobile phones or computers. How did people communicate over long distances?

They used flashes of light, dots, dashes, and flags.

Whether a signaling device is electronic or not, in its simplest state it works by showing “on” or “off.” Today, we use electronic devices for most of our communications. At its most basic level, these devices are just a collection of switches that turn on and off very rapidly.

Morse Code was created for electric telegraph in the early 1840s, Morse code was also extensively used for early radio communication beginning in the 1890s. In the early part of the 20th century, the majority of high-speed international communication was conducted in Morse code, using telegraph lines, undersea cables, and radio circuits. The

Titanic used Morse code on a simple wireless to plea for help.

Semaphore - flag signaling was a military signal methods used to send messages over long distance from hill top to hill top. It requires a bit of time to master the letter circles and to do so that it is seen correctly by the viewer. Telescopes were also used to see the sender and increase the distance covered. It was more successfully used at shorter distances and as a signal method between ships passing at sea.

Now that we are in the digital age and computers are in our daily life, the old ways of signaling are simply not around today but fun to know as a basic Scout skill.

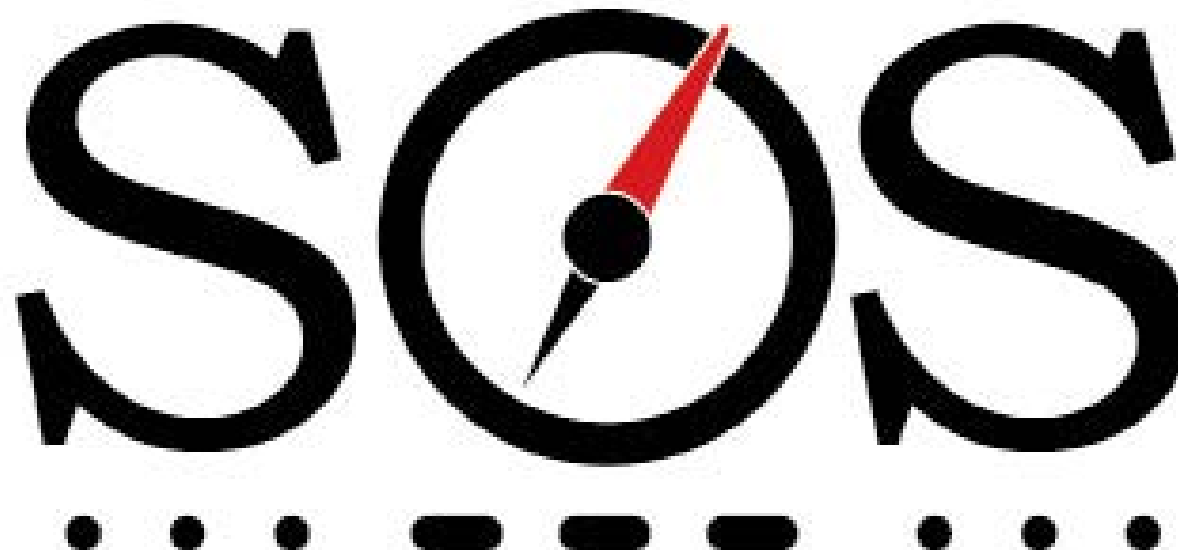
It is good fun to be able to signal your friend across the street without other people understanding what

you are talking about. Before the development of telephones or radios, signal codes allowed many people to communicate over long distances.

While there are few practical applications for these signaling methods in today’s world, morse code is still useful to know in case of an emergency.

In the following pages we present some fun activities to try out with friends. You can also build a small light flashing morse sender device or a razor blade radio. Mastering the Morse code is a real skill and at the start it will be a slow delivery of the letters, but like all things a bit of practice will improve your skill.

Once you know the Morse code it can be applied to torch and mirror signaling and even sending secret messages to your friend by tapping out morse on a table.



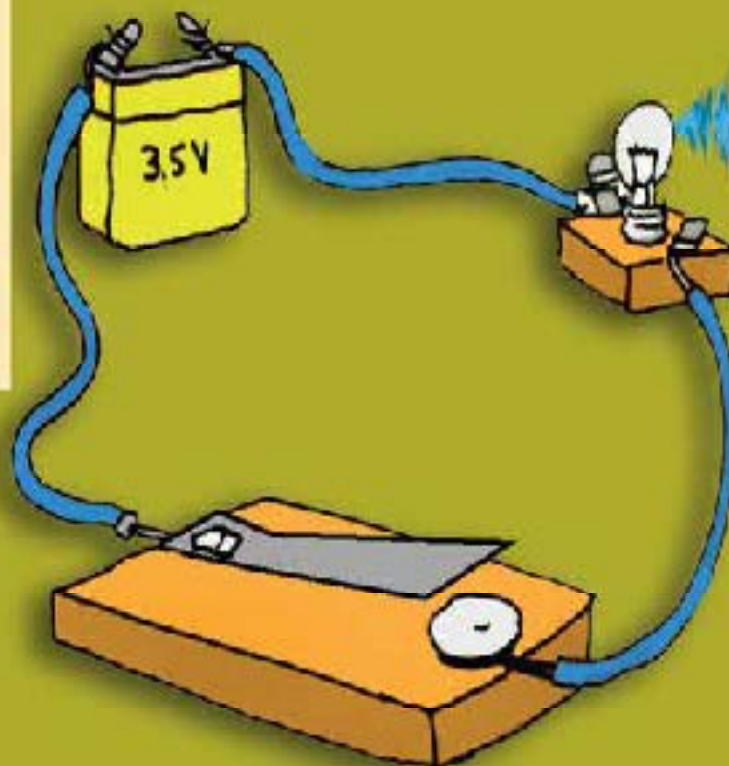
A	● —	N	— ●
B	— ● ● ●	O	— — —
C	— ● — ●	P	● — — ●
D	— ● ●	Q	— — ● —
E	●	R	● — ●
F	● ● — ●	S	● ● ●
G	— — ●	T	—
H	● ● ● ●	U	● ● —
I	● ●	V	● ● ● —
J	● — — —	W	● — —
K	— ● —	X	— ● ● —
L	● — ● ●	Y	— ● ● —
M	— —	Z	— — ● ●

1	● — — — —	6	— ● ● ● ●
2	● ● — — —	7	— ● ● ● ●
3	● ● ● — —	8	— — — ● ●
4	● ● ● ● —	9	— — — — ●
5	● ● ● ● ●	0	— — — — —

Create two Morse signallers as shown and send some messages to your friends

You will need some wood, wire, battery, small bulb holder and bulb, strip of copper or tin and some screws.

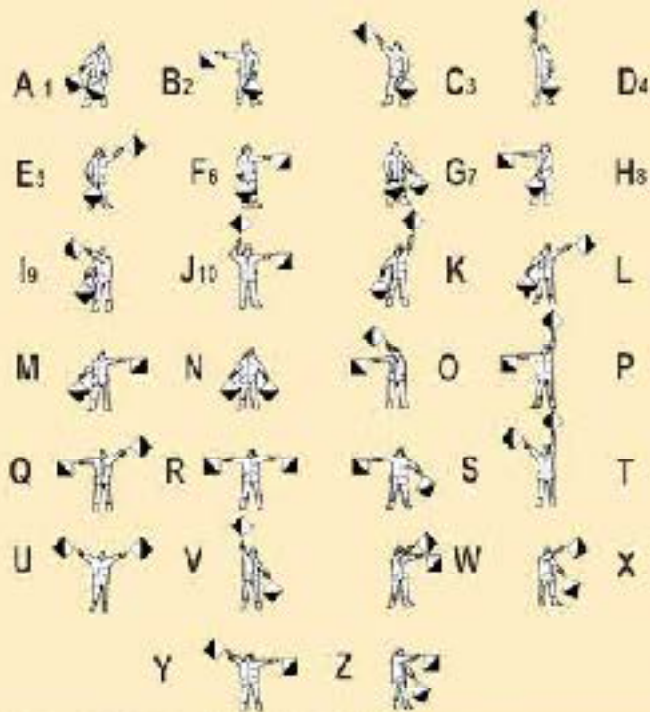
Morse is transmitted by a series of dots and dashes...a dot is a quick flash and a dash a longer flash.



Morse Signalling



Semaphore (as seen by the receiver)



Semaphore Grid

By using the semaphore grid it is easy to send a message without having to remember all the symbols – you just need to remember the symbols for the first five letters. It is always a good idea to write out your message before you start.

Example - the letter N is 4 and 3

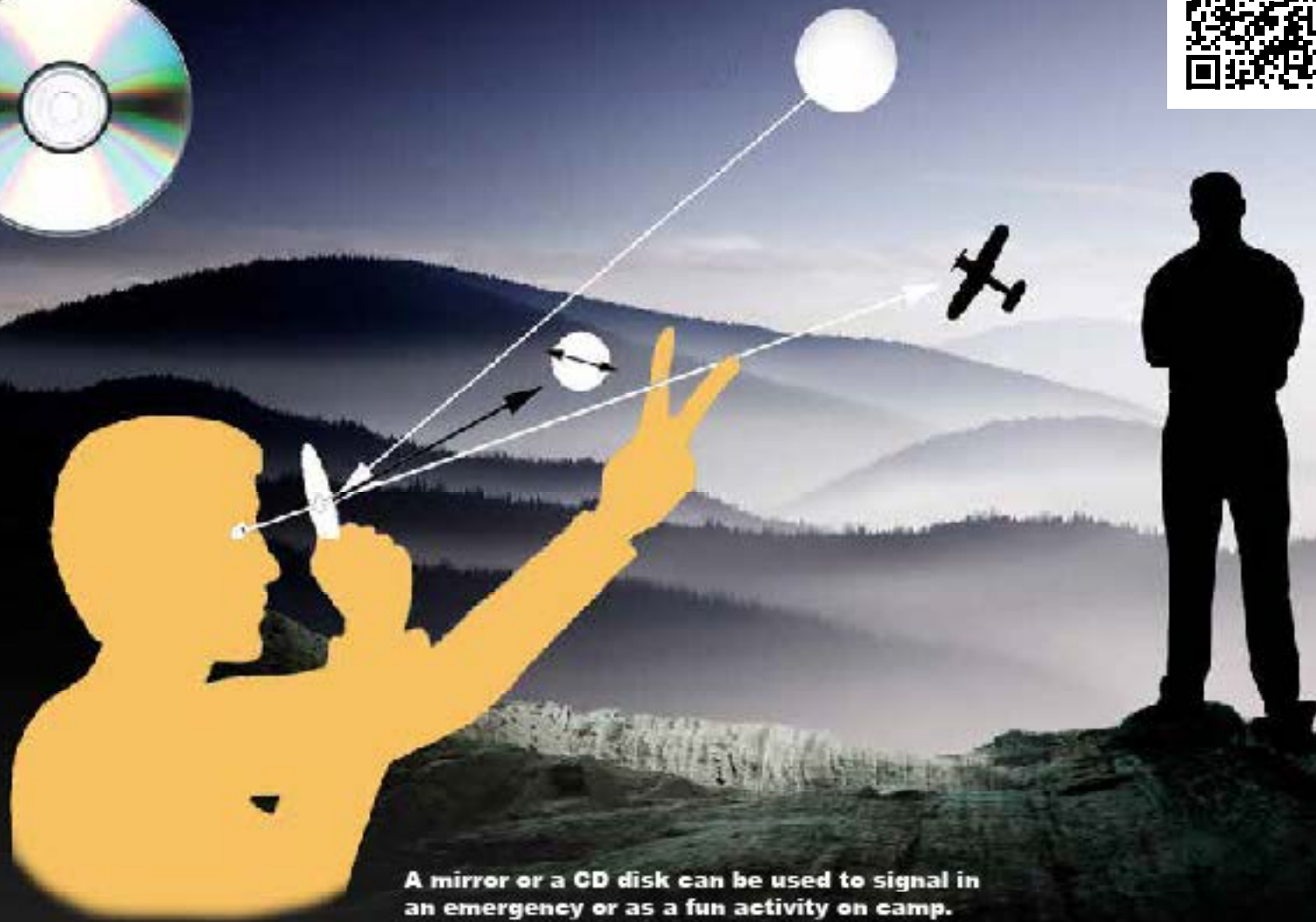
Semaphore Grid

	1	2	3	4	5
1	A	B	C	D	E
2	F	G	H	I	J
3	K	L	M	N	O
4	P	Q	R	S	T
5	U	V	W	X	Y



Semaphore

CD Disk



A mirror or a CD disk can be used to signal in an emergency or as a fun activity on camp.

Two fingers are used (as shown) to aim the signal and by flashing the disk it is possible to send a message using Morse Code.

Mirror Signalling

Walkie talkies are a great way of communicating with friends.

The phonetic alphabet provides a means to clarify messages and avoid confusion - if there is a crackling noise on the line. It also adds an authentic tone to your messages.

It is also possible to use a walkie talkie feature on your smart phone by downloading an app.



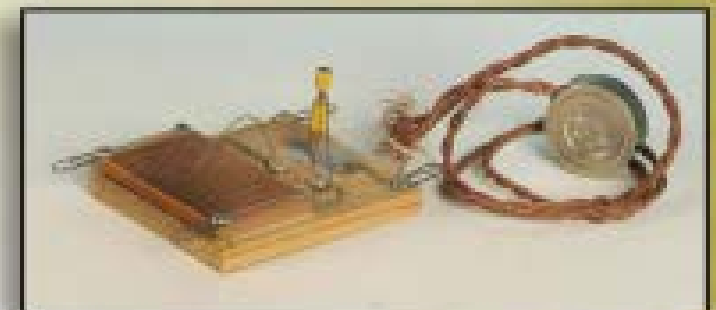
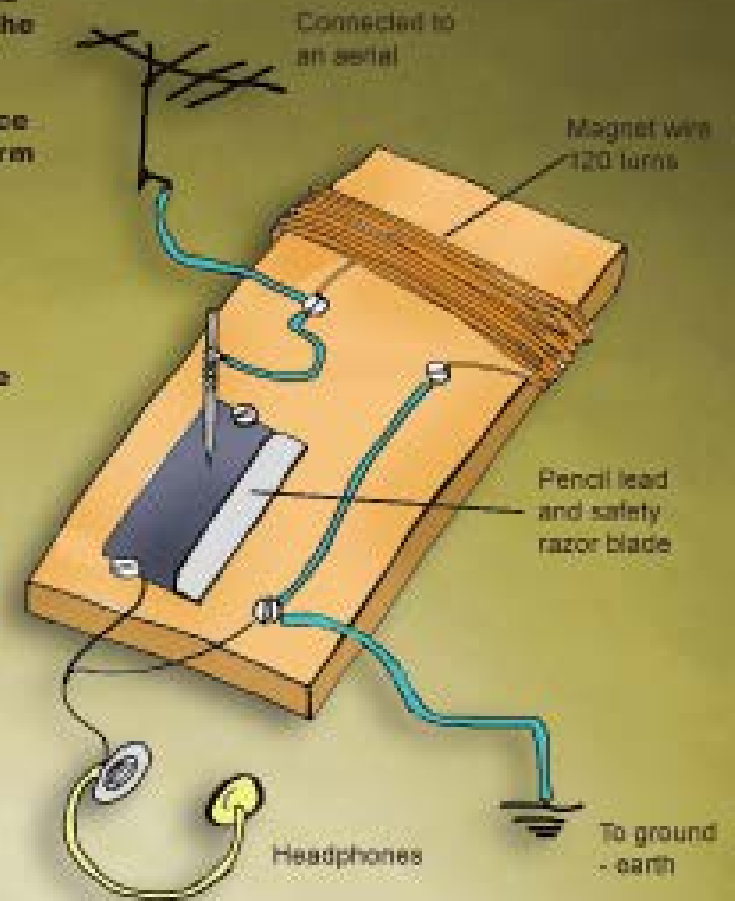
Phonetic Alphabet

A Alpha - 0 -	B Bravo - 1 -	C Charlie - 2 -	D Delta - 3 -	E Echo - 4 -	F Foxtrot - 5 -
G Golf - 6 -	H Hotel - 7 -	I India - 8 -	J Juliet - 9 -	K Kilo - 0 -	L Lima - 1 -
M Mike - 2 -	N November - 3 -	O Oscar - 4 -	P Papa - 5 -	Q Quebec - 6 -	R Romeo - 7 -
S Sierra - 8 -	T Tango - 9 -	U Uniform - 0 -	V Victor - 1 -	W Whiskey - 2 -	X Xray - 3 -
Y Yankee - 4 -	Z Zulu - 5 -	1 One - 6 -	2 Two - 7 -	3 Three - 8 -	4 Four - 9 -
5 Five - 0 -	6 Six - 1 -	7 Seven - 2 -	8 Eight - 3 -	9 Nine - 4 -	0 Zero - 5 -

Walkie Talkies

The foxhole radio was very popular during the second world war to keep up with news. It has no power source as it gets its signal from radio waves.

The safety razor and lead from the pencil act like a switch by moving the pencil lead across the blade you can hear radio broadcasts



Fox-hole Radio





Spin over your head
Connecting string should be 1200 long



The bullroarer is an ancient method of signaling used by many people, often in tribal ceremonies.

It consists of a piece of wood that is carved into an aerodynamic wing shape at least 30cm long attached to a string that is spun over the head to create a buzzing noise

They are easy to make and decorate with your most interesting designs



Bullroarer

Frame Code

The frame code uses a grid system to determine the position of letters. The message is then written graphically as shown. The dot indicates the second letter in the frame.

AB	CD	EF
GH	IJ	KL
MN	OP	QR

ST	YZ
UV	WX

┌ A • B

└ DOT

Code Wheel

A Code wheel is used to create secret messages by replacing one letter for another.

The first letter in the message is the letter that matches with A on the outer circle so it can be encoded

MEET AT THE CLOCK

PHFFJ PJ JAF NTVNC

The Romans invented the stick code. This was created by winding a leather strip around a stick of a special thickness. The message was then written on the leather and when unravelled would appear to be random letters

It could only be decoded if you has a similar sized stick



Secret Codes

