



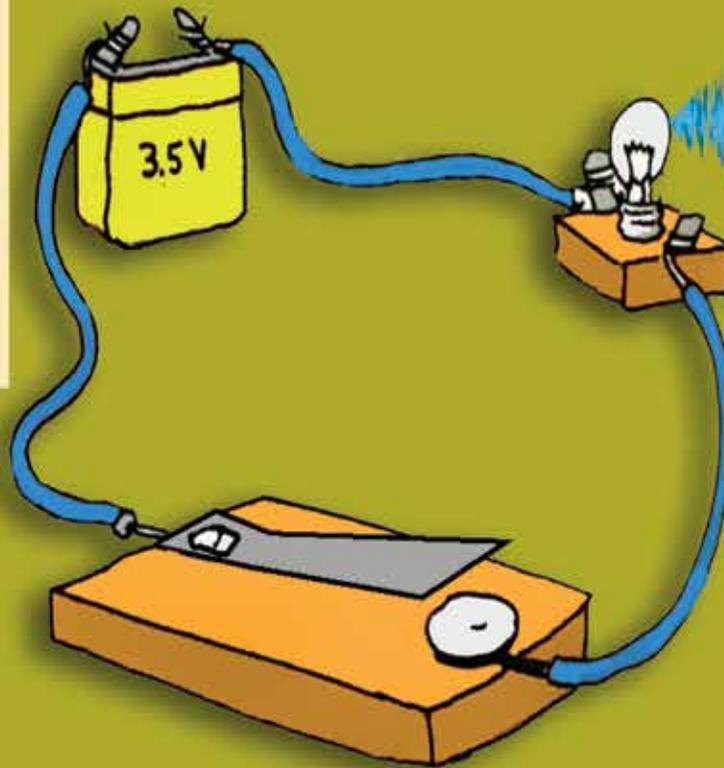
A	• -	N	• •
B	- • • •	O	- - - -
C	- • - •	P	• - - -
D	- • • •	Q	- - • -
E	•	R	- • •
F	• • - •	S	• • •
G	- • • •	T	-
H	• • • •	U	• • -
I	• •	V	• • • -
J	• - - -	W	• - -
K	- • -	X	- • • -
L	• - • •	Y	• - - -
M	- -	Z	- • • •

1	• - - - -	6	• • • • •
2	• • - - -	7	- • • • •
3	• • • - -	8	- - • • •
4	• • • • -	9	- - - • •
5	• • • • •	0	- - - - -

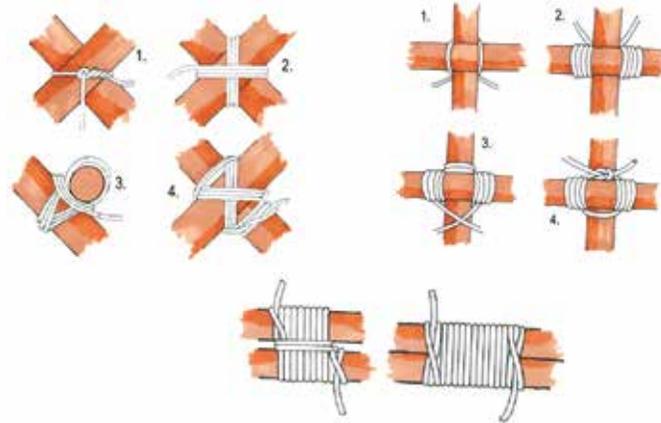
Create two Morse signallers as shown and send some messages to your friends

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.

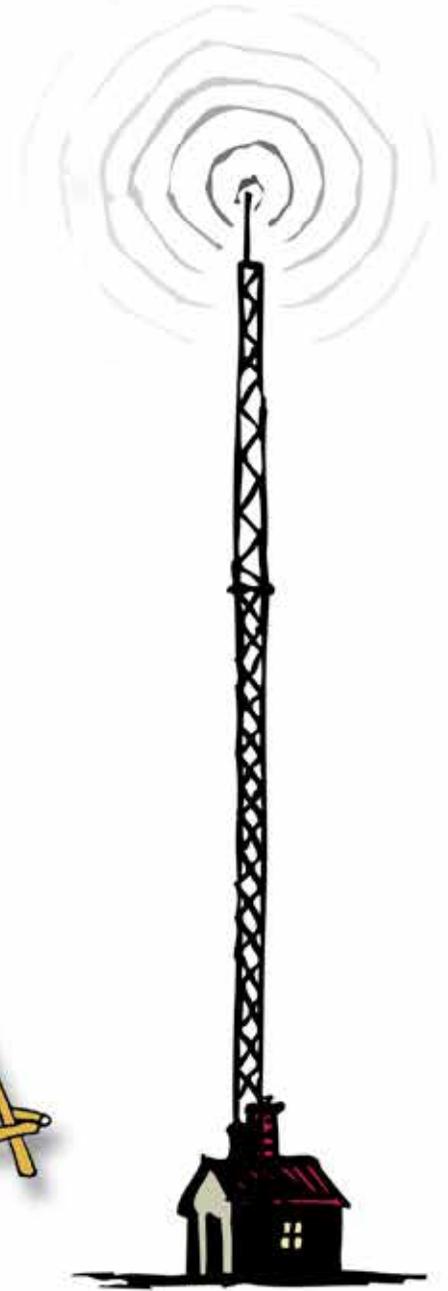
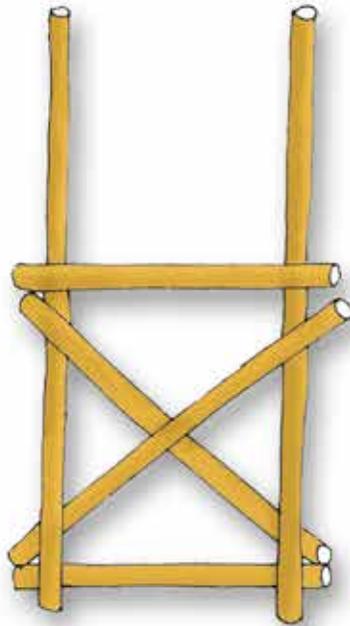


Morse Signalling



When transmitting a radio signals you need to get your aerial as high up as you can.

A pioneering tower is a good way of doing this and can also be used as a platform for signalling using semaphore flags

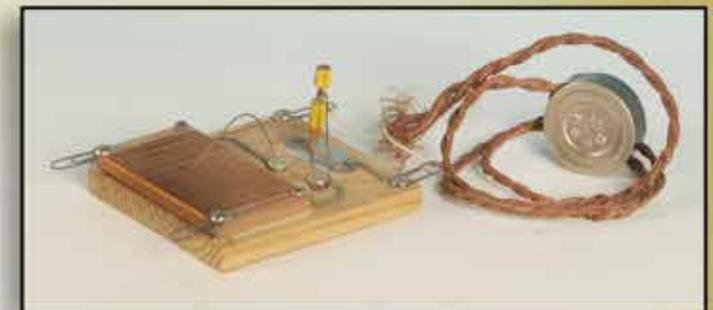
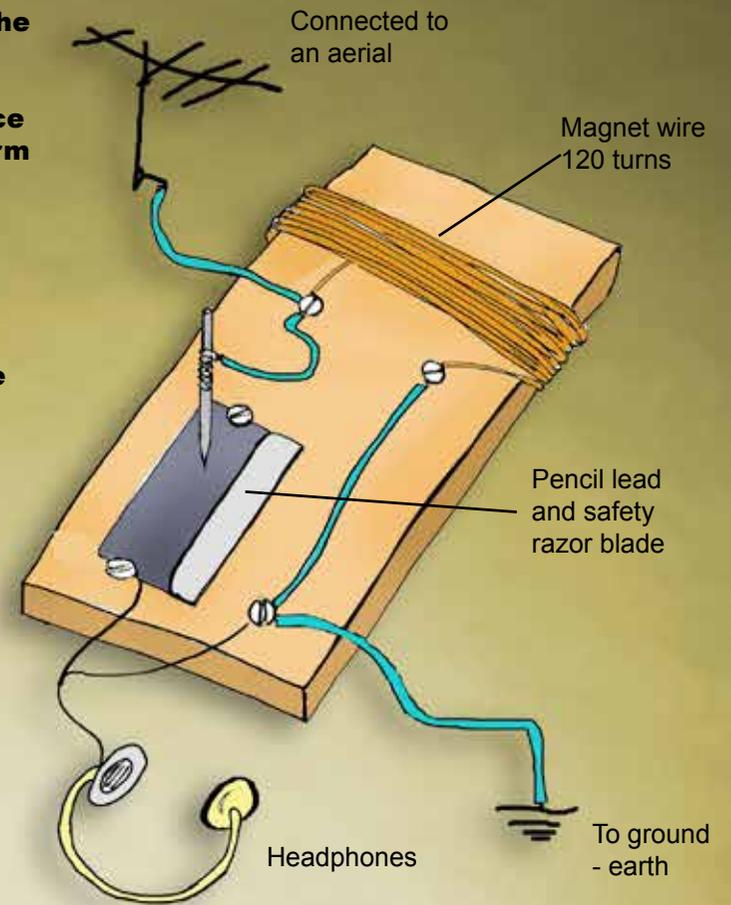


Aerial Tower



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





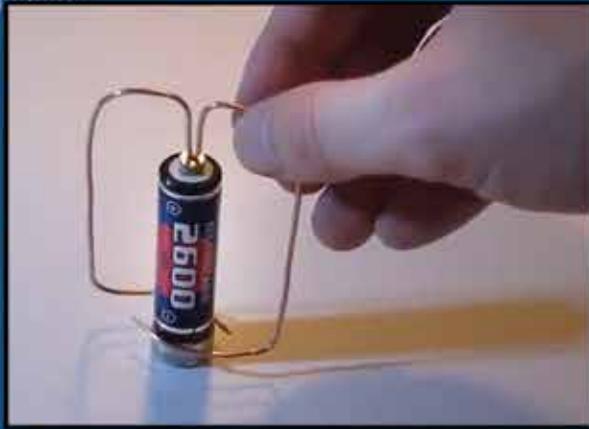
These amazing bots are easy to make with some simple part.

You need a small battery, the head of a tooth brush, a wobble motor and some sticky pads

Click on the Video and Web Icon for inspiration and instructions.

Wobble Bots

4879424657
8987453322
22469



Make the simplest motor in the world
You will need a battery, some wire and a small magnet.

Click on video icon to see youtube videos



Simplest motor in the world



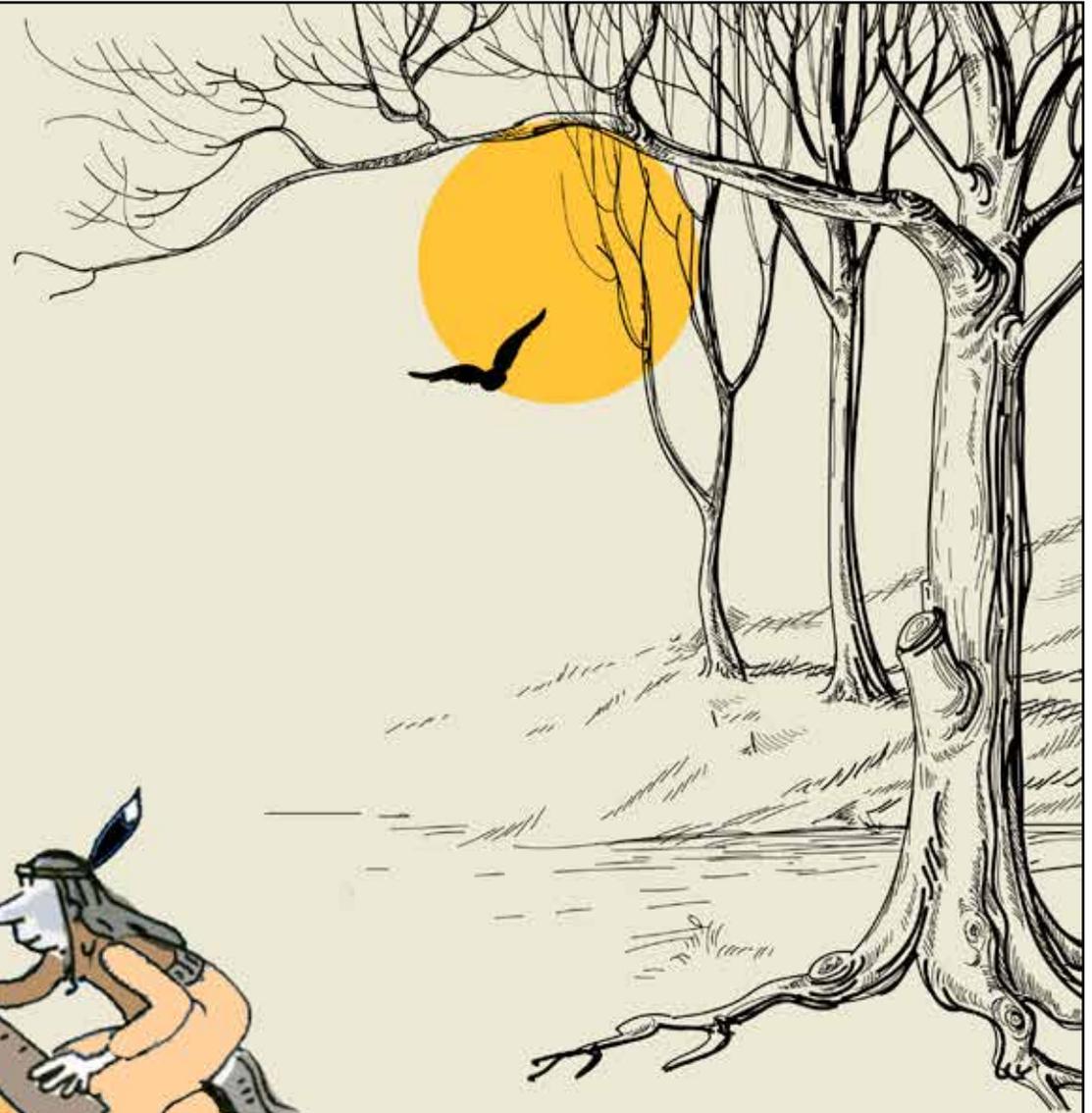
24677895235256
5256789874
5326345624682
46487947898745
53263456224657
25678987453322
34562246982925
48794246982927

The smoke signal is one of the oldest forms of long-distance communication. It is a form of visual communication used over long distance.

In general smoke signals are used to transmit arrival, signal danger, or gather people to a common area.

In Ancient China, soldiers stationed along the Great Wall would alert each other of impending enemy attack by signalling from tower to tower. In this way, they were able to transmit a message a very long distance.

Create a smoky fire with damp grass and try to send a signal to someone far away.

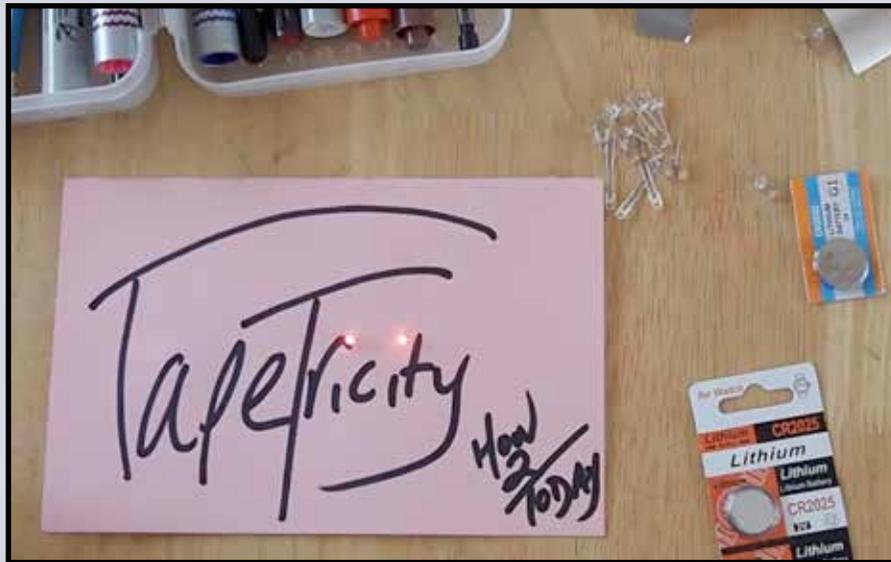


Smoke Signalling



Tape electrics is a way of creating low voltage electrical circuits with aluminium tape instead of wire.

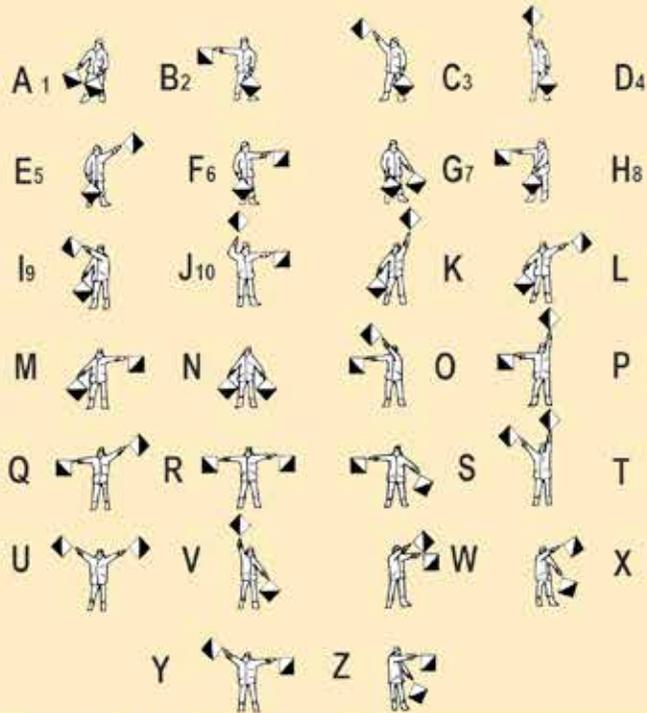
This is a great way to make all types of unusual stuff with blinking diode lights



Tape Electrics



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.

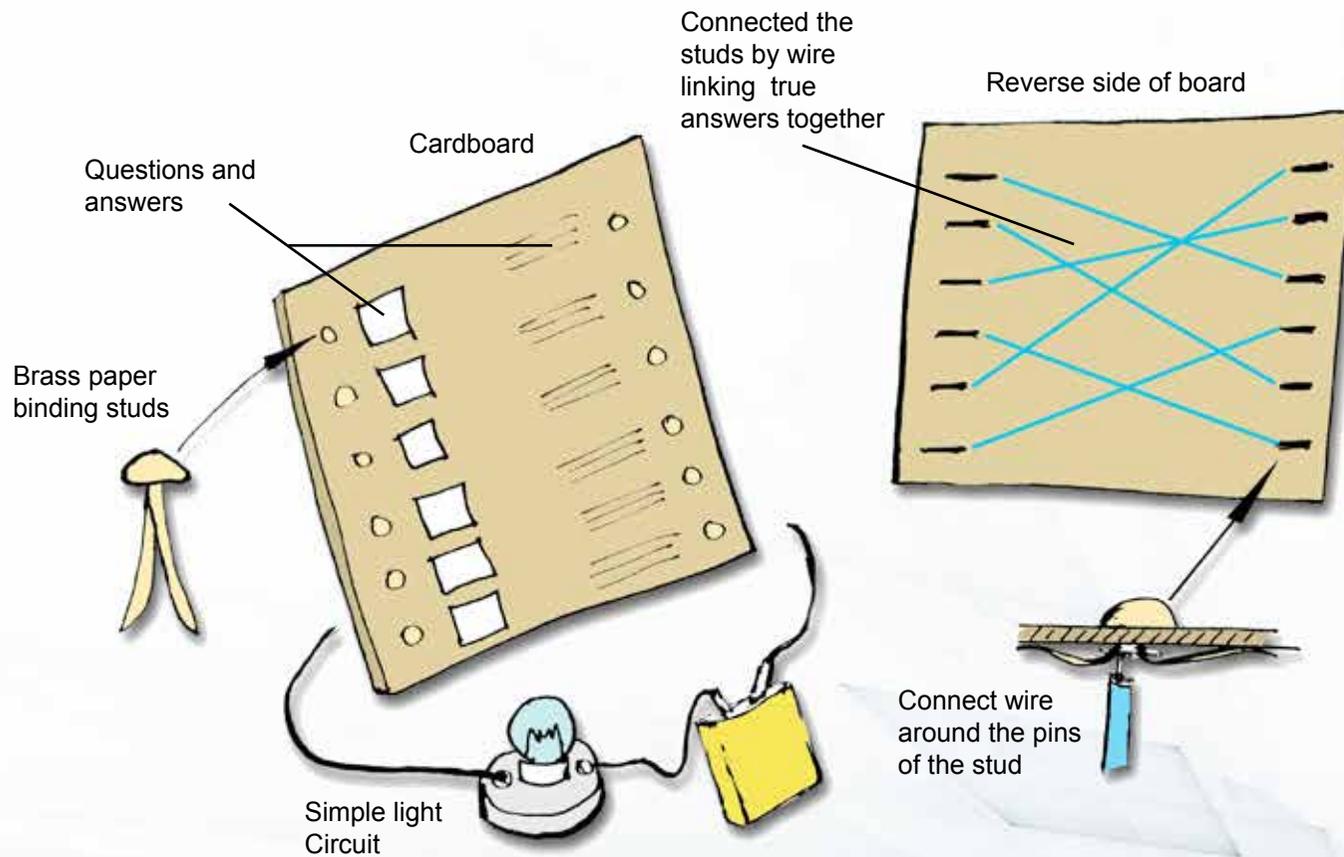
Example - the letter N is 4 and 3

Semaphore Grid

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



Semaphore



True or False Boards are a fun way of creating learning material. The questions and answers are set up in two lines and mixed up so that they don't line up beside each other.

A brass paper binder is placed beside each question and answer. The Scout then uses a simple light circuit to find out the correct answers by placing one side of the circuit on a question pin and trying to discover the answer - the light goes on when he/she is correct.

True or False Board

Spin over your head

Connecting string should be 1200 long



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

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

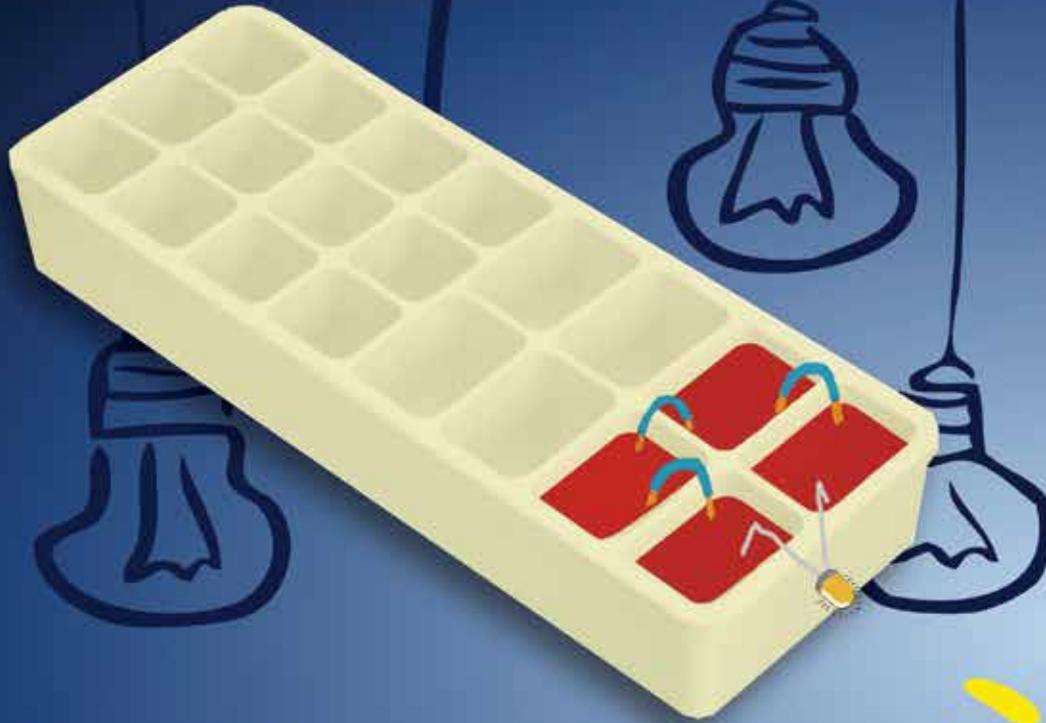


Cave painting is an ancient storytelling technique using symbols and drawings.

Create your own cave paintings using shadow-graphs to create shapes of animals that can be drawn or painted around



Cave Painting



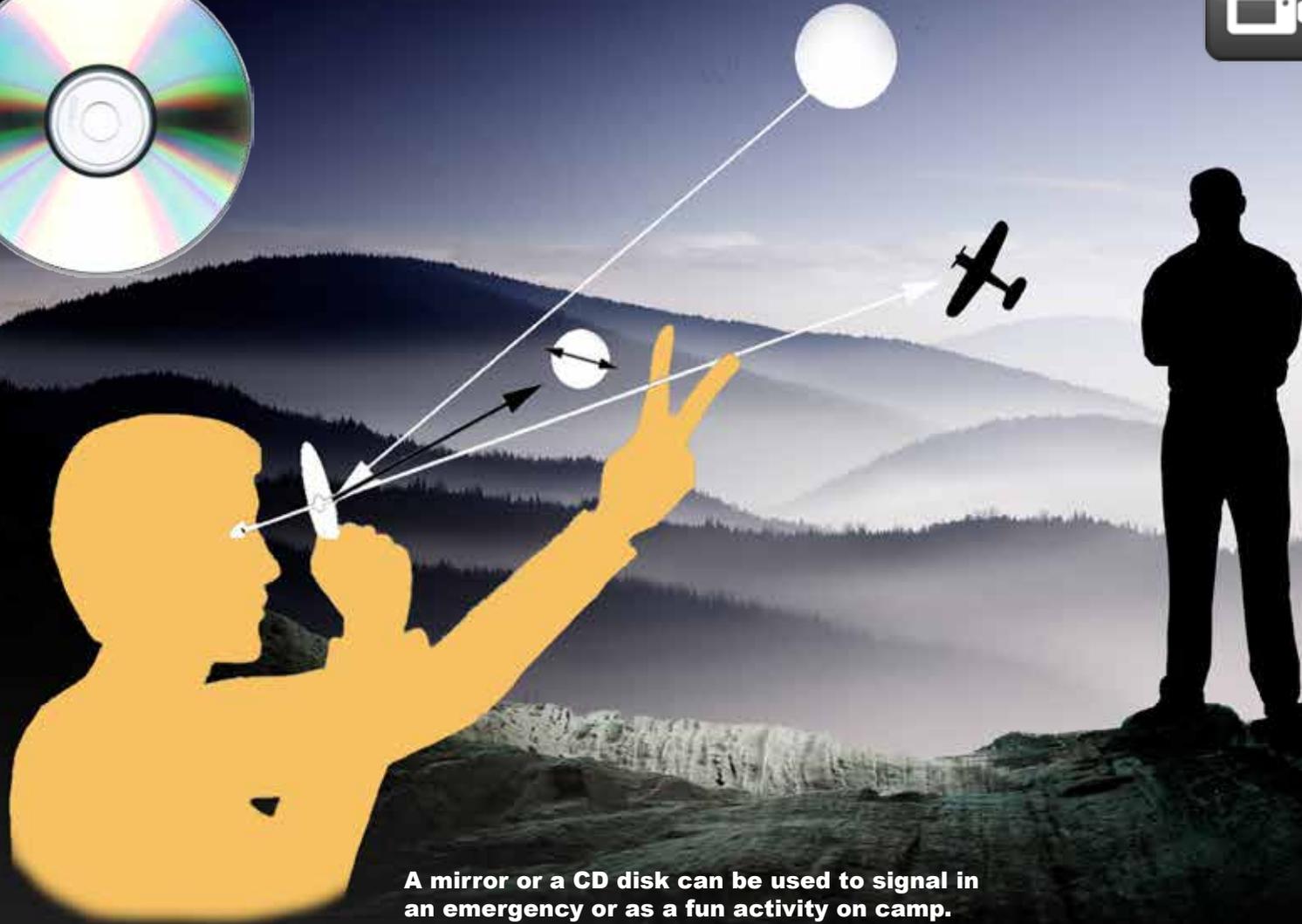
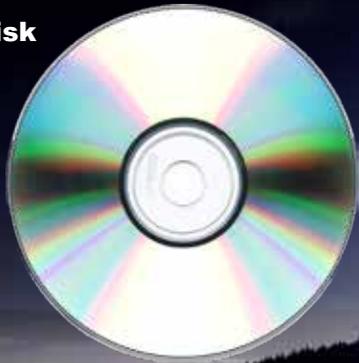
Create a simple battery using an ice cube tray, some vinegar, wire and a diode bulb.

Click on Video Icon to be amazed



Vinegar Battery

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.

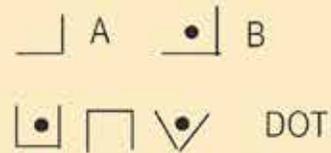
Mirror Signalling

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	
UV	YZ
	WX



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

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 Alfa 0--	B Bravo -000	C Charlie -0-0	D Delta -00	E Echo 0	F Foxtrot 0-0-0
G Golf --0	H Hotel 0000	I India 00	J Juliet 0-0-0	K Kilo -0-0	L Lima 0-0-0
M Mike --	N November -0	O Oscar --	P Papa 0-0-0	Q Quebec -0-0	R Romeo 0-0
S Sierra 000	T Tango -	U Uniform 00-	V Victor 000-	W Whiskey 0-0-	X Xray -00-
Y Yankee -0-0	Z Zulu -0-0	1 One 0-0-0-0	2 Two 0-0-0-0	3 Three 0-0-0-0	4 Four 0-0-0-0
5 Five 0-0-0-0	6 Six -0-0-0-0	7 Seven -0-0-0-0	8 Eight -0-0-0-0	9 Nine -0-0-0-0	0 Zero -0-0-0-0

Walkie Talkies

Plastic trash bag

Light Bamboo canes

Hole cut in plastic

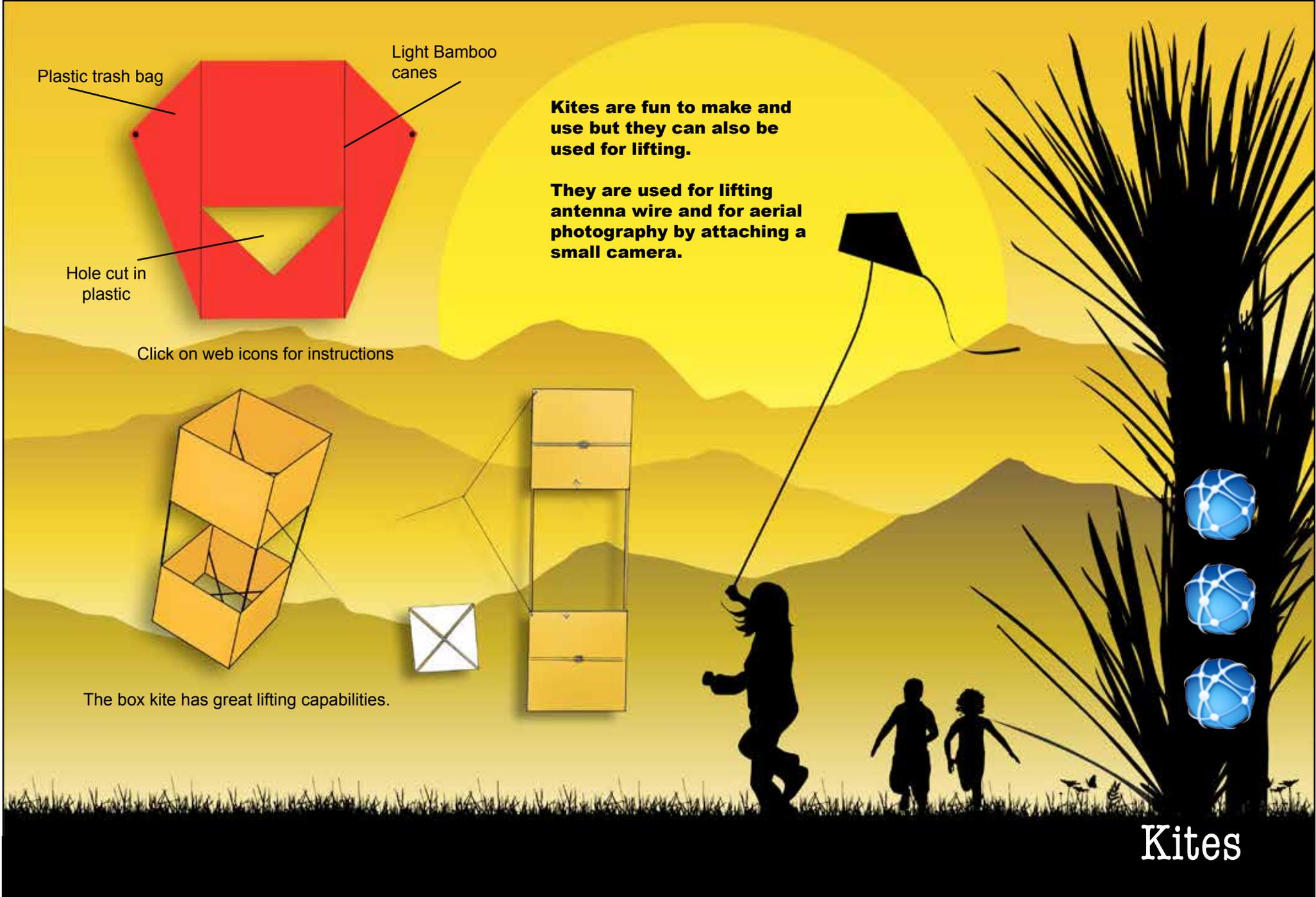
Click on web icons for instructions

Kites are fun to make and use but they can also be used for lifting.

They are used for lifting antenna wire and for aerial photography by attaching a small camera.

The box kite has great lifting capabilities.

Kites

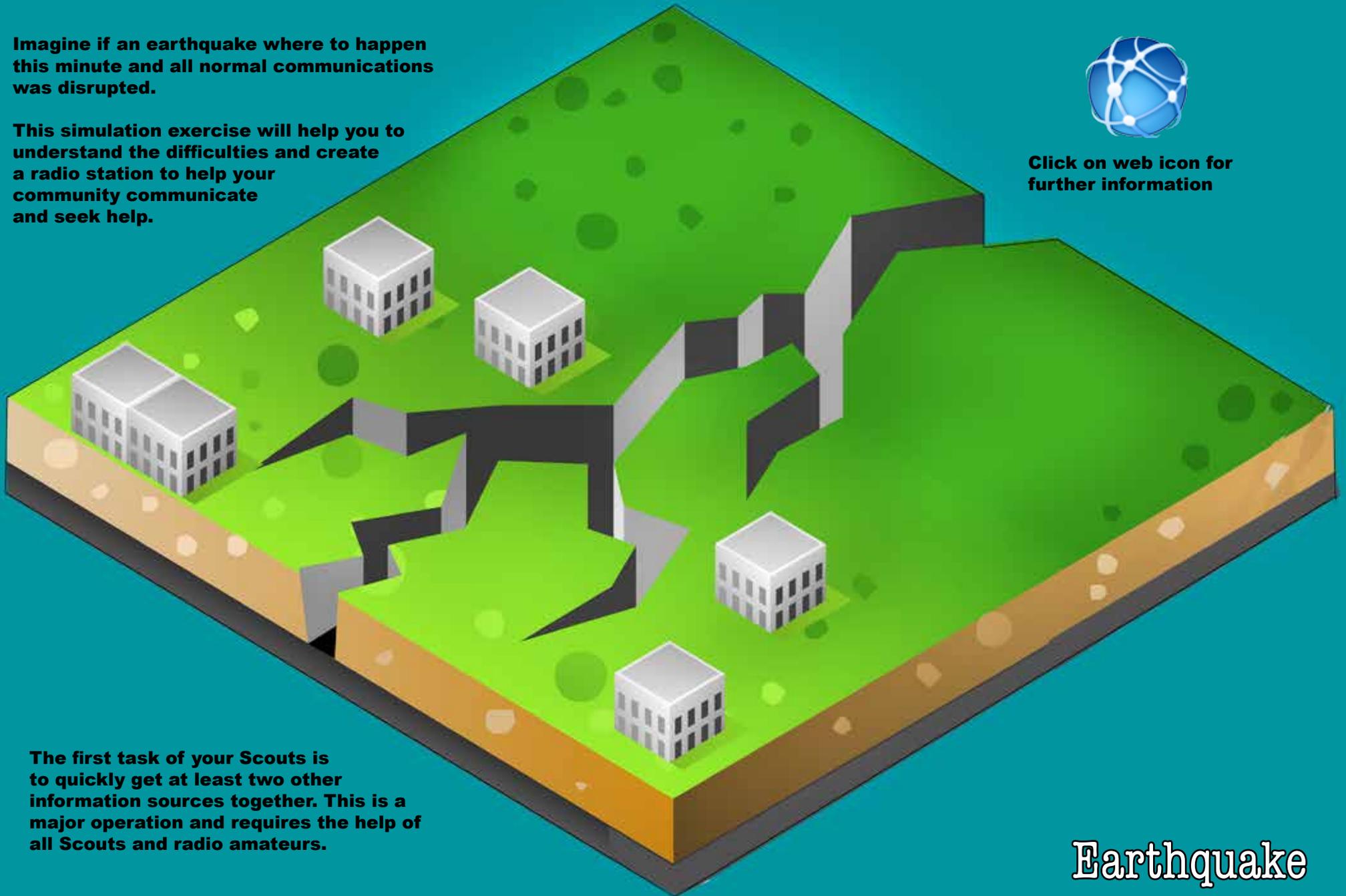


Imagine if an earthquake were to happen this minute and all normal communications were disrupted.

This simulation exercise will help you to understand the difficulties and create a radio station to help your community communicate and seek help.



Click on web icon for further information

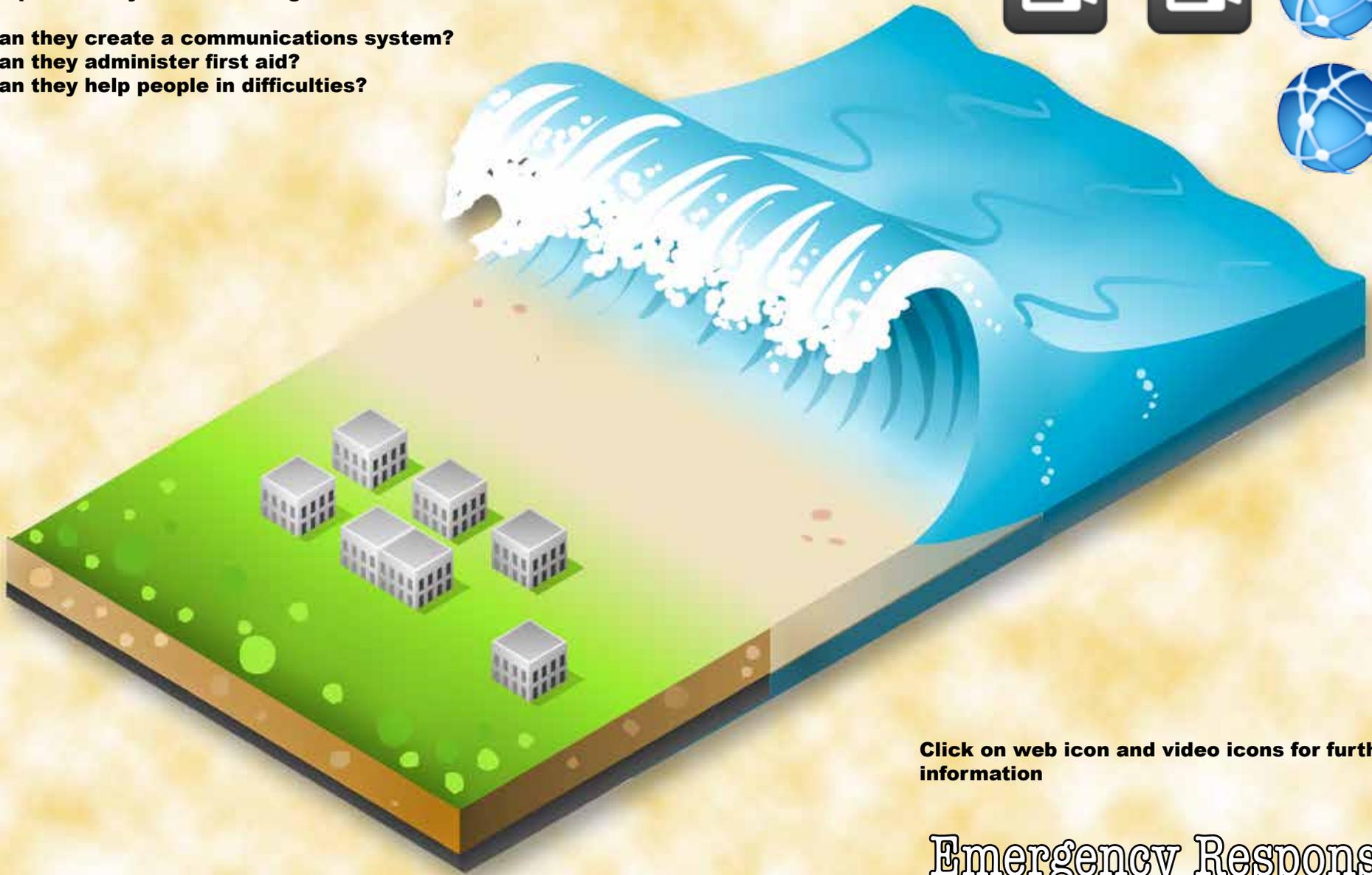


The first task of your Scouts is to quickly get at least two other information sources together. This is a major operation and requires the help of all Scouts and radio amateurs.

Earthquake

Emergencies can happen at any time - how prepared are your scouts to get into action.

**Can they create a communications system?
Can they administer first aid?
Can they help people in difficulties?**



Click on web icon and video icons for further information

Emergency Response