

# **LEVEL 3**

## **Unit 2 – Practical Skills for a Forest School Programme**

# Practical Skills for a Forest School Programme

## Evidence Monitoring Form – Unit 2

<b>ASSESSMENT CRITERIA</b> On completion of this Unit you will have demonstrated the ability to:		<b>Evidence:</b> Please show where you have evidenced each element	<b>Student</b>	<b>Assessor</b>	<b>Internal Verifier</b>	<b>External Moderator</b>
<b>1</b>	<b>Be able to facilitate a range of woodland skills appropriate to a Forest School programme.</b>					
1.1	Select and use personal protective equipment (PPE) for working in a range of situations at Forest School					
1.2	Demonstrate how to safely use a range of hand tools and explain their use to a client group at a Forest School					
1.3	Demonstrate the safe checking, cleaning, maintenance and storage of tools at a forest School					
1.4	Train learners in the tying and use of a range of knots at a Forest School and explain how this can be taught to a client group					
1.5	Demonstrate how to make a range of different items using natural woodland materials and explain how this can be taught to a client group					
1.6	Erect a temporary shelter, using tarpaulin and ropes					
1.7	Explain how to erect a temporary shelter, making use of woodland materials					
<b>2</b>	<b>Be able to facilitate campfire management appropriate to a Forest School programme.</b>					
2.1	Demonstrate a safe siting, lighting and management of a campfire and the surrounding area and explain how this can be taught to a client group					
2.2	Demonstrate simple methods of cooking over a campfire with due regard to basic food hygiene and explain how this can be taught to a client group					
2.3	Demonstrate how to safely extinguish a campfire, and explain how this can be taught to a client group					
2.4	Demonstrate how to leave a permanent fire site safe					
2.5	Demonstrate how to remove evidence of a temporary fire					

**PSFSP 1 Be able to facilitate a range of woodland skills appropriate to a Forest School programme.**



PSFSP 1.1 Select and use personal protective equipment (PPE) for working in a range of situations at a Forest School.

Season	Clothing and Personal Protective Equipment – UK, (I have spent summers in Bavaria and South Australia)
Spring	<p>In the Spring, depending on the weather I would wear</p> <p>And would wear for each season</p> <ul style="list-style-type: none"> <li>• Long Trousers, Boot Socks and my Hiking Boots – This will protect me from brambles, nettles flies and ticks*</li> </ul> <p>Always carry</p> <ul style="list-style-type: none"> <li>• waterproofs</li> <li>• Winter hat and gloves</li> <li>• Sun Cream (UV’s still get through on a cloudy day)</li> <li>• Insect repellent</li> <li>• My bush hat</li> </ul> <p>Top half</p> <ul style="list-style-type: none"> <li>• Cotton Shirt – long sleeved</li> <li>• May be a T shirt underneath – depending on weather</li> <li>• My waist coat as a layer that can be removed</li> <li>• Fleece on top of that if necessary</li> </ul> <p>What I find is I can get hot quickly</p> <p>Spring weather in my experience various, for example I have camped in snow during Easter in Leicestershire and been in 28° heat in Wales during Easter.</p> <p>In a nut shell, be well prepared for extremes during spring</p>
Summer	<p>Long Trousers, Boot Socks and my Hiking Boots – This will protect me from brambles, nettles flies and ticks*</p> <p>Boots and long trousers do also protect when using tools</p> <p>Depending on the activity I am taking part in I would wear shorts, however not in a forest school setting</p> <p>Always carry</p> <ul style="list-style-type: none"> <li>• waterproofs</li> <li>• Winter hat and gloves</li> <li>• Sun Cream</li> </ul>

	<ul style="list-style-type: none"> <li>• Insect repellent</li> <li>• My bush hat</li> </ul> <p>Top half</p> <ul style="list-style-type: none"> <li>• Cotton Shirt – long sleeved</li> <li>• My waist coat as a layer that can be removed</li> </ul> <p>My waist coat is also very use full for carry gear with its various pockets</p>
<b>Autumn</b>	<p>Autumn in my experience it can still be pretty warm I have always planned expeditions with young people up to October half term, at that point the weather starts to change.</p> <p>Autumn may need an extra layer occasionally – again long sleeves and trousers as usual</p> <p>At this point I may also be getting into the realms of a scarf or a buff and later on a warn hat and gloves</p>
<b>Winter</b>	<p>Winter I usually carry extra clothes in the car and my pack, the bush hat comes of and I have hat that is a bit of cross between a deerstalker and a one of those Russian style furry hats where the ear flaps come down</p> <p>I have and sometime wear a pair of fleece jogger as a second layer, extra on and a spare pair of socks with me</p> <p>On the top, I would have a t shirt, a long-sleeved shirt, a fleece, my waistcoat, then a waterproof</p>

#### \*Ticks

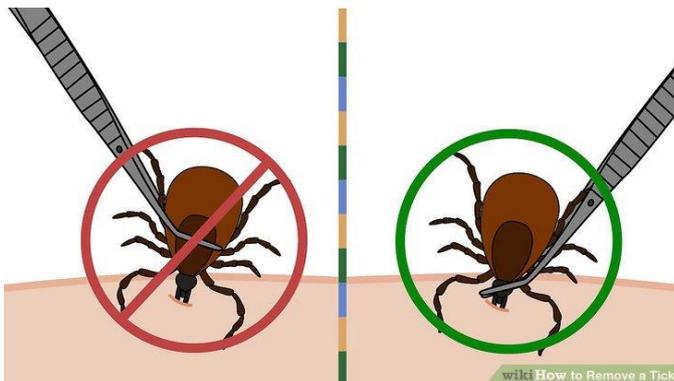
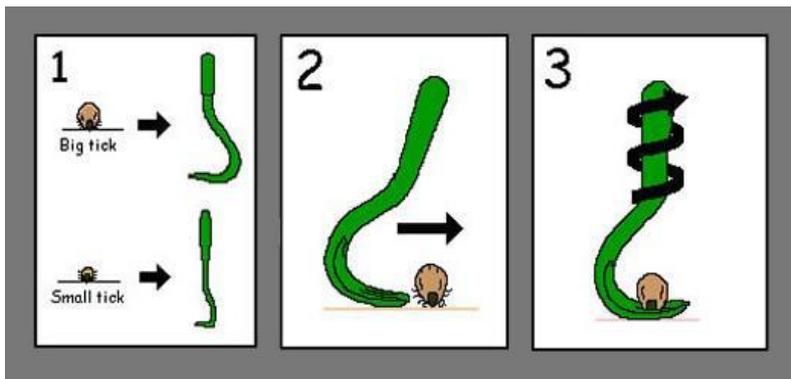
- Ticks carrying disease are found across the UK in both town and countryside
- Not all ticks are infected – infection rate in any place varies from zero to about 15%
- Ticks can be very small and can go unnoticed
- Most active March to October, but they can be active on mild winter days
- You will not feel the tick attach to you, so check your skin and that of children
- Remove a tick properly, without squashing it

<http://www.lymediseaseaction.org.uk/about-ticks/>

## Ticks



## Tick removal



I have ordered three different types of tick remover, for our first aid kits

A card



A Plastic twist style tick remover



And a mettle tweezer style



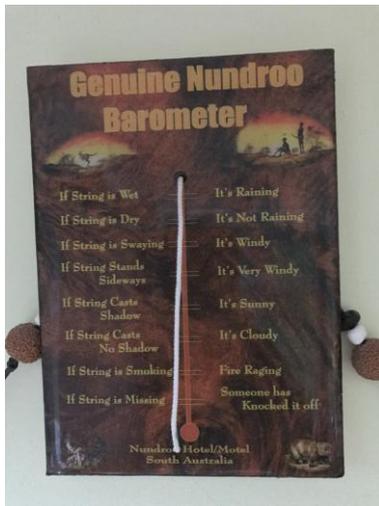
## Weather

What I find has become easier over the years is the ability to check the weather with the onset of smart phones. I like technology but I don't rely on it, there are skills in watching clouds, wind and be able to almost smell a storm coming. However smart phones are pretty handy and the weather forecast are quite accurate more so now.

There was a time when I didn't worry too much about the weather but as you get older you start to feel it more.

Most of the gear I need is in stowed in the car, little bit if kit for every eventuality – I hope – and because occasionally my work with young people is very random, meaning we are out and about three or four times a week, I tend to have on hand the kit that is needed

I also have one of these which has the technical name of a 'Fair Dinkum Aussie Barometer', the one I have is from Nundroo Hotel, which apparently is the more accurate modal



### **Lyme disease - [www.nhs.uk](http://www.nhs.uk)**

Lyme disease, or Lyme borreliosis, is a bacterial infection spread to humans by infected ticks.

Ticks are tiny spider-like creatures found in woodland and heath areas. They feed on the blood of birds and mammals, including humans. Ticks that carry the bacteria responsible for Lyme disease are found throughout the UK and in other parts of Europe and North America.

It's estimated there are 2,000 to 3,000 new cases of Lyme disease in England and Wales each year. About 15% of cases occur while people are abroad.

Lyme disease can often be treated effectively if it's detected early on. But if it's not treated or treatment is delayed, there's a risk you could develop severe and long-lasting symptoms.

#### **Early symptoms**

Many people with early-stage Lyme disease develop a distinctive circular rash at the site of the tick bite, usually around three to 30 days after being bitten. This is known as erythema migrans.

The rash is often described as looking like a bull's-eye on a dart board. The affected area of skin will be red and the edges may feel slightly raised.

The size of the rash can vary significantly and it may expand over several days or weeks. Typically it's around 15cm (6 inches) across, but it can be much larger or smaller than this. Some people may develop several rashes in different parts of their body.

However, around one in three people with Lyme disease won't develop this rash.

Some people with Lyme disease also experience flu-like symptoms in the early stages, such as tiredness (fatigue), muscle pain, joint pain, headaches, a high temperature (fever), chills and neck stiffness.

#### **Later symptoms**

More serious symptoms may develop several weeks, months or even years later if Lyme disease is left untreated or is not treated early on. These can include:

pain and swelling in the joints (inflammatory arthritis)

problems affecting the nervous system – such as numbness and pain in your limbs, paralysis of your facial muscles, memory problems and difficulty concentrating

heart problems – such as inflammation of the heart muscle (myocarditis) or sac surrounding the heart (pericarditis), heart block and heart failure

inflammation of the membranes surrounding the brain and spinal cord (meningitis) – which can cause a severe headache, a stiff neck and increased sensitivity to light

Some of these problems will get better slowly with treatment, although they can persist if treatment is started late.

A few people with Lyme disease go on to develop long-term symptoms similar to those of fibromyalgia or chronic fatigue syndrome. This is known as post-infectious Lyme disease. It's not clear exactly why this happens, but it's likely to be related to overactivity of your immune system rather than persistent infection.

### **When to see your GP**

You should see your GP if you develop any of the symptoms described above after being bitten by a tick, or if you think you may have been bitten. Make sure you let your GP know if you've spent time in woodland or heath areas where ticks are known to live.

Diagnosing Lyme disease is often difficult as many of the symptoms are similar to other conditions. A spreading rash some days after a known tick bite should be treated with appropriate antibiotics without waiting for the results of a blood test.

Blood tests can be carried out to confirm the diagnosis after a few weeks, but these can be negative in the early stages of the infection. You may need to be re-tested if Lyme disease is still suspected after a negative test result.

In the UK, two types of blood test are used to ensure Lyme disease is diagnosed accurately. This is because a single blood test can sometimes produce a positive result even when a person doesn't have the infection.

If you have post-infectious Lyme disease or long-lasting symptoms, you may see a specialist in microbiology or infectious diseases. They can arrange for blood samples to be sent to the national reference laboratory run by Public Health England (PHE), where further tests for other tick-borne infections can be carried out.

### **How you get Lyme disease**

If a tick bites an animal carrying the bacteria that cause Lyme disease (*Borrelia burgdorferi*), the tick can also become infected. The tick can then transfer the bacteria to a human by biting them.

Ticks can be found in any areas with deep or overgrown vegetation where they have access to animals to feed on.

They're common in woodland and heath areas, but can also be found in gardens or parks.

Ticks don't jump or fly, but climb on to your clothes or skin if you brush against something they're on. They then bite into the skin and start to feed on your blood.

Generally, you're more likely to become infected if the tick remains attached to your skin for more than 24 hours. But ticks are very small and their bites are not painful, so you may not realise you have one attached to your skin.

Who's at risk and where are ticks found?

People who spend time in woodland or heath areas in the UK and parts of Europe or North America are most at risk of developing Lyme disease.

Most tick bites happen in late spring, early summer and autumn because these are the times of year when most people take part in outdoor activities, such as hiking and camping.

Cases of Lyme disease have been reported throughout the UK, but areas known to have a particularly high population of ticks include:

Exmoor

the New Forest and other rural areas of Hampshire

the South Downs

parts of Wiltshire and Berkshire

parts of Surrey and West Sussex

Thetford Forest in Norfolk

the Lake District

the North York Moors

the Scottish Highlands

It's thought only a small proportion of ticks carry the bacteria that cause Lyme disease, so being bitten doesn't mean you'll definitely be infected. However, it's important to be aware of the risk and seek medical advice if you start to feel unwell.

### **Treating Lyme disease**

If you develop symptoms of Lyme disease, you will normally be given a course of antibiotic tablets, capsules or liquid. Most people will require a two- to four-week course, depending on the stage of the condition.

If you are prescribed antibiotics, it's important you finish the course even if you are feeling better, because this will help ensure all the bacteria are killed.

If your symptoms are particularly severe, you may be referred to a specialist to have antibiotic injections (intravenous antibiotics).

Some of the antibiotics used to treat Lyme disease can make your skin more sensitive to sunlight. In these cases, you should avoid prolonged exposure to the sun and not use sunbeds until after you have finished the treatment.

There's currently no clear consensus on the best treatment for post-infectious Lyme disease because the underlying cause is not yet clear. Be wary of websites offering alternative diagnostic tests and treatments that may not be supported by scientific evidence.

### **Preventing Lyme disease**

There is currently no vaccine available to prevent Lyme disease. The best way to prevent the condition is to be aware of the risks when you visit areas where ticks are found and to take sensible precautions.

You can reduce the risk of infection by:

keeping to footpaths and avoiding long grass when out walking

wearing appropriate clothing in tick-infested areas (a long-sleeved shirt and trousers tucked into your socks)

wearing light-coloured fabrics that may help you spot a tick on your clothes

using insect repellent on exposed skin

inspecting your skin for ticks, particularly at the end of the day, including your head, neck and skin folds (armpits, groin, and waistband) – remove any ticks you find promptly

checking your children's head and neck areas, including their scalp

making sure ticks are not brought home on your clothes

checking that pets do not bring ticks into your home in their fur

### How to remove a tick

If you find a tick on your or your child's skin, remove it using a pair of tweezers that won't squash the tick (such as fine-tipped tweezers) or a tick removal tool (available from pet shops or vets).

Gently grip the tick as close to the skin as possible and pull steadily away from the skin without crushing the tick. If you use a tick removal tool, follow the manufacturer's instructions.

Wash your skin with water and soap afterwards, then apply an antiseptic cream to the skin around the bite.

Don't use a lit cigarette end, a match head or substances such as alcohol or petroleum jelly to force the tick out.

"Chronic Lyme disease"

There has recently been a lot of focus on Lyme disease in the media, with much attention on people who've been diagnosed with "chronic Lyme disease".

This term has been used by some people to describe persistent symptoms such as tiredness, aches and pains, usually in the absence of a confirmed Lyme disease infection. It's different to "post-infectious Lyme disease" (see above), which is used to describe persistent symptoms after a confirmed and treated infection.

It's important to be aware that a diagnosis of chronic Lyme disease is controversial. Experts do not agree on whether the condition exists, or whether the symptoms are actually caused by a different, undiagnosed problem.

In either case, there's no evidence to suggest people diagnosed with chronic Lyme disease can pass the condition on to others, and there's little clear evidence about how best to treat it.

### Layering System



## Heat stroke

### HEAT EXHAUSTION

#### Symptoms

- Faint or Dizzy
- Headache
- Profuse Sweating
- Irritability
- Weak, Rapid Pulse
- Shallow Breathing
- Pale, Cool, Clammy Skin
- Nausea or Vomiting
- Muscle Cramps

#### Treatment

- 1) Have victim lie down in a cool shaded area or air conditioned area.
- 2) Drink water if victim is conscious.
- 3) Use caution when victim stands up, apply cold compresses.

### HEAT STROKE

#### Symptoms

- Absence of Sweating
- Pulsating Headache
- Hot, Red, Dry Skin
- High Body Temp: Above 103
- Nausea or Vomiting
- Strong, Rapid Pulse
- Confusion
- Convulsions
- May Lose Consciousness

#### Treatment

#### 1) DIAL 911

- 2) Take action to cool victim by any means. Place victims in a cool area, wrap in wet towel, sponge victim with cool water.



TRAILMOB.COM

Info Source: MayoClinic.org

## Hypothermia

# SPOT

## FROSTBITE

A victim is often unaware of frostbite because frozen tissue is numb.



### Signs & Symptoms

- Redness or pain in any skin area may be the first sign of frostbite.

### Other signs include:

- a white or grayish-yellow skin area
- skin that feels unusually firm or waxy
- numbness

## HYPOTHERMIA

Hypothermia often occurs at very cold temperatures, but can occur at cool temperatures (above 40°F), if a person is wet (from rain, sweat or cold water) and becomes chilled.



### Signs & Symptoms

#### Adults:

- shivering
- exhaustion
- confusion
- fumbling hands
- memory loss
- slurred speech
- drowsiness

#### Infants:

- bright red, cold skin
- very low energy



If a person's temperature is below 95° get medical attention immediately.

<http://emergency.cdc.gov/disasters/winter/staysafe/index.asp>



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

Dehydration

# AM I DEHYDRATED?

## HERE'S HOW TO TELL

### SIGNS OF MILD TO MODERATE DEHYDRATION INCLUDE:

### SIGNS OF SEVERE DEHYDRATION INCLUDE:



THIRST



DRY MOUTH



RAPID BREATHING



RAPID HEARTBEAT



FATIGUE



HEADACHE



SEVERE DIZZINESS OR LIGHTEADEDNESS



UNCONSCIOUSNESS OR DELIRIUM



INFREQUENT URINATION AND/OR DARK URINE



DRY SKIN OR SKIN THAT'S LOST ITS ELASTICITY



NOT URINATING, OR HAVING VERY DARK-COLORED URINE



EXTREMELY DRY OR SHRIVELED SKIN THAT LACKS ELASTICITY



CONSTIPATION



DIZZINESS OR LIGHTEADEDNESS



SUNKEN EYES



EXTREME THIRST



MUSCLE CRAMPS



BAD BREATH



LOW BLOOD PRESSURE



NOT SWEATING EVEN WHEN YOU SHOULD BE (FOR INSTANCE WHILE OUT FOR A RUN IN HOT WEATHER)



CRAVINGS FOR SWEETS



ALTERED MOOD, CRANKINESS, OR FUZZY THINKING

Demonstrate appropriate PPE Personal Protective Equipment selection for the following tasks



### Coppicing

*Coppicing is the art of cutting trees and shrubs to ground level allowing vigorous re-growth and a sustainable supply of timber for future generations. Trees and shrubs that are cut down this way can produce shoots that grow over 3cm in a week and a coppiced tree can live many times longer than if the tree had not been cut down at all.*

For Coppicing I would use

Long Trousers

Long Sleeved shirt

Boots

Rigger loves

Waterproof top for extra protection

Depending on how big the trees to be coppiced may be possibly hard hat or climbing helmet

Season dependent layers – I am assuming the best time to coppice would be before the spring growth

Tools used – Saw, may be Billhook so Rigger Gloves as well



or



I have put some hard hats in my Amazon Basic ready get some for future use

### Clearing Nettles and Brambles

We wouldn't clear all the nettles in our wood – we are going to fence off, (by that I mean a barrier) and say these are nettles we use them for this, this & this, and these animals like to live in nettles.

It would be a case of clearing them in our outdoor classroom area and the defined paths through the woods

And we want to keep some of our brambles for bush tucker . . .

Clearing nettles and bramble is more likely to happen early to mid-summer at the point they become a problem

Still will need to cover up as with coppicing and definitely boots to protect you when cutting them to protect lower leg and because of uneven grown and rocks in our woodland

Coat for an extra layer of protection

The tools we have to complete this task would be Billhook and a Rake, this would also mean rigger gloves, possibly on both hands and I think I would also have an age limit on this of 11 or 13 + because nettles at this time of year are face height.

Debris we would put on our compost heap, which is only really there to create an environment for us to explore . . .

Alternatively, use the nettles as a resource



### Sawing Logs

Again, long tops and bottoms

Tool use would be a Bow Saw so Rigger Gloves, and I personally use knee pads or my garden kneeler



or

We also have a saw horse



This has a few sharp butts on it so again gloves before it even gets picked up and brought out

## Cooking and using a fire

Long trousers and long sleeves

Fire resistant Gloves

Use the respect position

We have a Burns first aid kit and a bucket of fresh water



PSFSP 1.2 Demonstrate how to safely use a range of hand tools and explain their use to a client group at a Forest School.



Tool Name	Safety	Use
<p><b>Bow Saw</b></p>	<p>Blade Cover</p> <p>Standing walking and passing</p> <p>Two arms and a tools length away from other people</p> <p>Glove on helper hand</p> <p>When not in use handle in blade out</p> <p>Kneel so the saw is cutting outside of the knee which is up</p> <p>Cross hands between handle until blade is established in wood</p> <p>Back into designated tool are when finished with</p>   <p>The Complete Tool Talk is here – I made this into laminated pocket-sized cards</p> <p>In our group when we use a tool for the first time I do the tool talk – over time parents and young people also do then</p>	<p>Cutting wood bigger than a 2p piece</p>

**Loppers**

Standing walking and passing

Two arms and a tools length away from other people

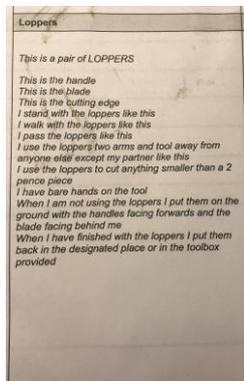
Bare hands on the tool

When not in use handle in front blade behind

Back into designated tool are when finished with

Walking Carrying & Passing

Cutting wood smaller than a 2p piece



The Complete Tool Talk is here – I made this into laminated pocket-sized cards

In our group when we use a tool for the first time I do the tool talk – over time parents and young people also do them

**Knife**

Similar to the other tools

I now recognise a mistake I had been making was not using a Glove on the Helper Hand – I do not however think I will be forgetting that again

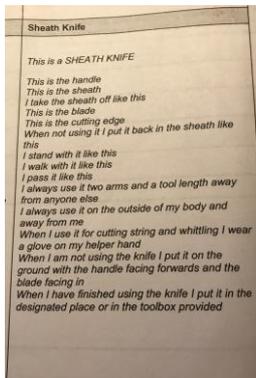
We now have small gloves for children as below



An interesting comparison is that the parent below was more nervous about knife work than the young people



He got the hang of it in the end with a little support . . .

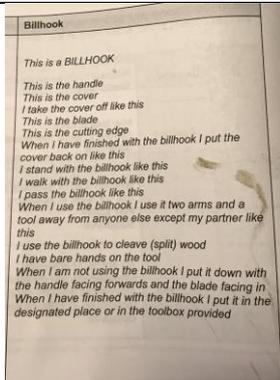


The Complete Tool Talk is here – I made this into laminated pocket-sized cards

In our group when we use a tool for the first time I do the tool talk – over time parents and young people also do them

Whittling and cutting string

<p><b>Billhook</b></p>	<p>What I have learnt about Billhooks is do not buy the cheap ones . . .</p> <p>So , here we have a cheap one of ebay – cost around £15 went blunt after only a couple of uses and has a strange metal bracket on the handle</p>  <p>I did manage to find one at a local Farmers Store paid three times the amount and have a much better quality tool – see below</p>  <p>We could say quality = better safety, only billhooks do not seem to come with a case, so I will need to devise a way before purchasing any more.</p> <p>Again, the safety element is in the tool talk</p> <p>Its Understanding the tool</p> <p>What to do when not using the tool</p> <p>Standing, Walking and Passing the tool</p> <p>Using the tool only for its intended use</p> <p>And what to do with the tool when not using it, ie designated tool box, handle forwards blade in . . .</p>	<p>Splitting wood</p>
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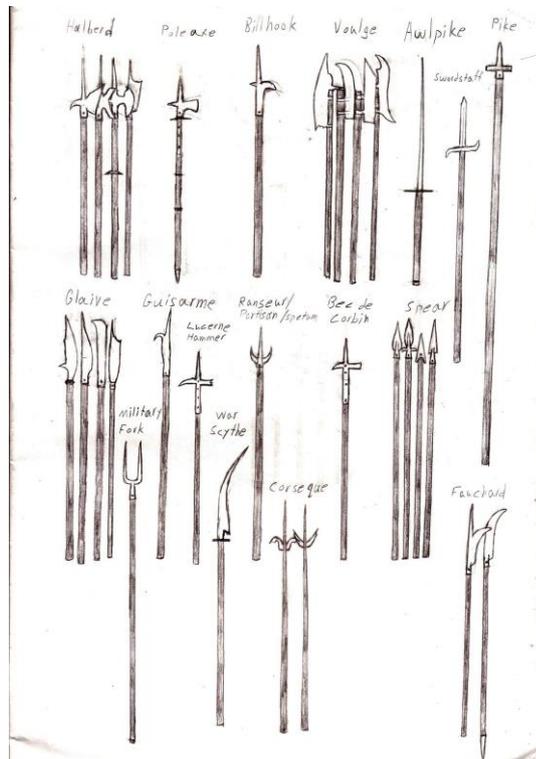


The Complete Tool Talk is here – I made this into laminated pocket-sized cards

In our group when we use a tool for the first time I do the tool talk – over time parents and young people also do them

\* \* \* \* \*

The history of billhooks goes way back to roman times and a military billhook for example in the English Civil war denoted rank



Source unknown

Many different civilisations across the world had use a curved knife/machete tool of some description in the last three thousand years.

Mainly for tending crops, pruning etc

See appendix 6 – an insight into English dialect words for billhook.



Tool Name	Maintenance Procedures	Sharpening Techniques
<p><b>Bow Saw</b></p>	<p>Make sure the blade cover is in tact</p> <p>Make sure the blade mechanism is positioned correctly</p> <p>Use the saw to determine if the blade is sharp i.e. it is still making cuts both ways across the whole of the blade</p>	<p>In my experience – I would not sharpen a bow saw</p> <p>Today replacement blades and even whole saws are now cheap enough to replace without the hassle of sharpening the blade</p> <p>However –</p> <p style="text-align: center;">* * * * *</p> <p><b>How to Sharpen A Bow Saw</b></p> <p>A bow saw is a commonly used saw intended for cutting green wood such as tree branches, shrubs or sawing logs to size. Intended to be used for speed, rather than a neat finish they're characterized by their bow shaped frame and a long, straight blade. A reasonably lightweight tool due to the hollow metal frame, they're also relatively easy to sharpen.</p>  <p><b>Bow Saw Requirements</b></p> <p>As a bow saw is used, it will continue to lose its shape and sharpness which means that it must be sharpened on a regular basis in order to keep the blade in optimal condition. A number of speciality tools are required in order to keep your saw blade sharp and since most modern saws have hardened teeth, they require diamond files to be sharpened. Other blades made of softer metals can be sharpened by more affordable saw files and sets.</p> <p><b>Four Stages Of Sharpening</b></p>

While sharpening saws may have become a forgotten craft, the steps to sharpen a bow saw are really quite simple. The four stages to sharpening a bow saw are trimming, shaping, setting and sharpening the teeth. It's important to remember that the edges of the saw file should be slightly rounded as this allows the base of the teeth to maintain a slight curve

### **Set It Up**

Setting a saw means bending alternating teeth outwards to either side, making the cut wider than the blade so that the latter does not jam. To avoid tooth breakage, never bend a tooth to the right that was previously bent to the left, and vice versa.

In order to sharpen a bow saw, you'll need the following: a saw vise, flat file, saw file and saw set. Prior to beginning, you'll need to ensure the bow saw is fixed in the saw vise.



### **Trim It**

With your flat file, file back and forth over the row of teeth until you've created a blunt surface on the point of every tooth.



### **Shape and Set It**

Now that the saw blade is treated to even filing with the 3-sided file, you'll use the three-sided file, reshape the saw blade teeth by running the file over each tooth three or four times. You'll need to repeat this process until all the teeth are the same shape and the base of the teeth lines up in a straight line. Alternating sides, bend the teeth of the saw outwards to either side which will make the cut of the saw wider than the blade so the blade will never catch while sawing.

		<p><b>Sharpen It</b></p> <p>Using your three-square saw file, guide it horizontally through the gap between teeth. It should be set so the file just clears the jaws of the blade. If you are working on a rip-cut saw, sharpen at the right angles to the blade and if you are working with any other type of saw, sharpen at 60-degree angles. File the back and front of the two teeth together, lifting the file slightly as it comes back.</p>  <p>To forgo the whole sharpening process entirely and purchase a new bow saw.</p> <p><a href="http://www.ebay.com/gds/How-to-Sharpen-A-Bow-Saw-/10000000205670671/g.html">http://www.ebay.com/gds/How-to-Sharpen-A-Bow-Saw-/10000000205670671/g.html</a></p>
<p><b>Loppers</b></p>	<p>check and oil regularly – with draw from use if in doubt</p> <p style="text-align: center;">* * * * *</p> <p><b>Don't overuse your lopper</b></p> <p>Though it may be tempting to use a lopper for every pruning task you come across, loppers are only truly suitable for cutting through branches and stems of small to medium diameter. Don't use your lopper to prune the hedges, cut the grass, weed the flowerbeds and cut down the apple tree as well! There are more appropriate tools available for these tasks.</p> <p><b>Sharpen lopper blade(s) when necessary</b> Should Your lopper's sharpened blade be blunted or dulled over time, simply sharpen along the bevelled edge with a <b>Canoe Stone</b> until you are satisfied with the blade's sharpness.</p> <p><b>Clean lopper blades after use</b></p> <p>Lopper blades and anvils should be cleaned of plant matter after each use. Do this with rubbing <b>meth's</b> and a soft rag.</p> <p><b>Lubricate lopper blades between uses</b></p> <p>When not using your lopper, or if it will be stored for a long time, apply a light coating of</p>	<p><b>Canoe Stone</b></p>  <p style="text-align: center;">* * * * *</p> <p><b>Following paragraphs are from</b> <a href="https://www.wonkeedonkeetools.co.uk/loppers/how-to-sharpen-lopper-blades">https://www.wonkeedonkeetools.co.uk/loppers/how-to-sharpen-lopper-blades</a> I have edited it slightly to fit my learning</p> <p><b>How to sharpen lopper blades</b></p> <p><b>Which type of Stone should you use to sharpen lopper blades?</b></p> <p>To sharpen a dulled or blunted lopper blade, use a Canoe Stone as pictured above.</p> <p><b>How to sharpen lopper blades</b></p> <p><b>Step 1 - Clean the blade</b></p> <p>Using warm water and a non-corrosive soap, clean the blade thoroughly to remove any particles of rust and debris. You should also clean off any hardened plant sap on the blade, using a solvent such as meth's</p>

	<p>oil to the blades. This will prevent rust from atmospheric moisture.</p> <p><a href="https://www.wonkeedonkeetools.co.uk/loppers/lopper-maintenance-and-care">https://www.wonkeedonkeetools.co.uk/loppers/lopper-maintenance-and-care</a></p>	<p><b>Step 2 - Secure lopper</b></p> <p>Without applying so much force as to damage it, secure your lopper in a vice, with the blades parted and the sharp edge pointing away from you</p> <p><b>Step 3 - File blade edge</b></p> <p>Holding your stone at a shallow an angle, file along the whole of the length of the blade. You should push the file forward over the edge of the blade, but never scrape it back. Getting the blade as sharp as you need it may take more than one stroke.</p> <p><a href="https://www.wonkeedonkeetools.co.uk/loppers/how-to-sharpen-lopper-blades">https://www.wonkeedonkeetools.co.uk/loppers/how-to-sharpen-lopper-blades</a></p> <p>I have edited it slightly to fit my learning</p>
<p><b>Sheath Knife</b></p>	<p>Check and clean regularly</p> <p>Check the knife still clicks into sheath correctly</p> <p>Check handle for cracks and breakage</p> <p>With draw from use if in doubt</p>	<p>Diamond Stone</p>  <p>See Appendix 7 - Knife Sharpening for an excellent guide on sharpening knives – it’s a bit Americanised but useful, and has brought back some forgotten knowledge for me</p> <p style="text-align: center;">* * * * *</p> <p><b>A SHARP KNIFE IS A SAFE KNIFE</b></p> <p>Keeping a sharp edge on your blade is important for your own safety. Compensating for a dull edge by applying additional force to finish a cut is where serious injuries can occur. If the knife blade is unexpectedly freed from what you are cutting, there is often an ongoing momentum that can slash you.</p> <p><a href="https://www.buckknives.com/about-knives/knife-sharpening/">https://www.buckknives.com/about-knives/knife-sharpening/</a></p>

		<p>Japanese whetstone Combination Grit 1000/6000</p>  <p>Nagura Stone Japanese Ice Bear Sharpening Stone</p> 
<p><b>Billhook</b></p>	<p>Check and clean regularly  Check handle for cracks and breakage  With draw from use if in doubt</p>	<p>Cigar Stone</p> 
<p><b>Other</b></p>	<p><b>Axe</b>  Check and clean regularly  Check head eye for looseness  Check handle and shaft for cracks splinters and wear and tear  With draw from use if in doubt</p>	<p>Puck Stone</p>  <p>How to Properly Sharpen Your Axe</p>



Proper sharpening and maintenance is essential to upholding the life and value of your axe. Ensuring your axe is always properly sharpened and cared for will help you preserve the quality of your axe.

Different sharpening techniques can be used, depending on the type of axe, its intended purpose, and the dullness of your particular blade.

It is important to remember to identify and follow the bevel of your axe in order to retain the original shape of the blade. Maintain sturdy and continual pressure on the sharpening tool while sliding it back and forth against the blade and move at the proper angle to ensure maximum sharpness and efficiency.

If your blade is rusted or requires polishing

If your blade is heavily rusted or requires polishing, it is recommended that this be done prior to sharpening the blade. While this step is not entirely essential, it will help to guarantee maximum effectiveness as well as restore the aesthetic quality of the blade. You should repeat this process every so often so your axe will always look polished and pristine.

To eliminate rust, begin with a rust eraser or steel wool. To polish, sandpaper can be used, and it is ideal to have multiple options varying from coarse to fine grit. Starting with the coarsest sandpaper, firmly rub the paper against the blade.

Be sure to go in one direction so that it creates an even and smooth surface. Repeat the process with sandpaper of finer grit. If there is still rust on the blade, go over the areas again with even finer grit sandpaper. Once all the rust is removed, polish the blade with a metal polishing paste and rag.

If your blade requires heavy sharpening

For blades that are particularly dull or have nicks



or grooves that need to be heavily sharpened and smoothed out, it is best to use a flat, fine-toothed file. An emery wheel may also be used. It is extremely important to let the blade cool often so as to not stress or weaken the steel. Too much heat can cause steel to become fragile or tempered.

Maintain a slight amount of pressure on the blade and steadily move it from back and forth against the sharpening tool. It is essential that the pressure is smoothly distributed so to ensure even results. If the blade of your axe is curved, be sure follow the natural shape of the bevel. Alternately, if your blade is straight, the entire bevel should be securely pressed against the file or wheel. Repeat this process on the other side of the blade.

If your blade requires minor sharpening

If the blade of your axe only requires minor sharpening, or if you have already successfully smoothed out nicks and dull edges, switch to a whetstone or sharpening tool with a smooth and coarse side. Be sure to lubricate your whetstone. Water should be used with clay, sandstone, or similar sharpeners, whereas oil should be used oil for oil-based whetstones. An axe grinder may be an easier alternative if available.



Secure your axe in a manner that will allow you to maintain a safe and secure grip on your stone. If using a grinder, use your body weight to create natural pressure against the axe. If using a stone, begin with the coarse side against your blade.

Beginning at the end, use strong, steady strokes while moving back and forth in small, circular motions. Be sure to maintain the natural shape of the edge. Repeat this process on both sides of the axe until they are evenly and smoothly sharpened.

If executed properly, an overhang or burr will accumulate on the edge. This is created when the steel strips away at the edge during the tapering process, producing a thinner and thus sharper edge. The burr or overhang is minimal but can be felt with your finger and must be correctly removed.

Removing the feathered, jagged edge (or burr)

To remove the burr that builds up on the edge, you will need the smoother side of your whetstone. Properly lubricate your whetstone. Use water for clay or sandstone sharpeners, and use oil for oil based whetstones.

		<p>Rotate the stone in a circular motion against the edge of the blade while slowly moving from end to end. Distribute an even amount of pressure throughout the entire process so as to not create an uneven or irregular surface. Do this to both sides of the blade, switching back and forth periodically to keep the blade even. Be aware of buildup on the whetstone and be aware it should be wiped down often so the whetstone or blade does not become damaged.</p> <p>Honing the edge using a leather or similar strap</p> <p>This step is completely optional but for the most refined and dedicated axe owners who wish to have an axe that is sharp, strong, and handsome, it is highly recommended. Honing your blade with a leather strap will give your axe a finer, keener and more polished appearance following sharpening. This will also give the sharpened edge of the blade an ultra-smooth look, while also making sure that no burrs remain. The end result is a blade with a sheen and sharp appearance.</p> <p>Use a relaxed but sturdy grip on your axe, so you can lightly stroke its blade against the leather. Your motions should always be going against the fine edge of the blade. Move the axe back and forth towards you with the blade against the leather. Make sure to move with the bevel and shape of the axe to evenly hone the edge. Flip the axe over and repeat the process on the other side, still moving back and forth against the sharpened edge of the blade.</p> <p>A protective coating can be applied to the blade now. Otherwise, you are finished and your blade should be in pristine condition. Always be sure you are using the correct tools to maintain safety and effectiveness.</p>
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### Other Maintenance and Sharpening information

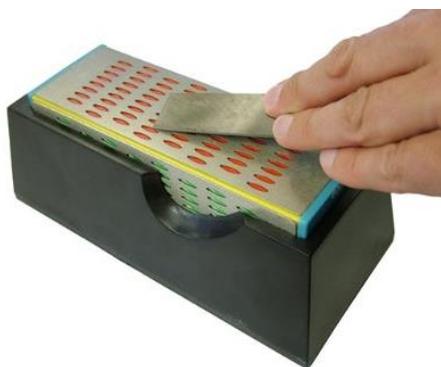
- I would not use a powered stone or grinder to sharpen any tools especially axes, I have ordered a Bastard File, which is better to take out nicks and damage



- We have two of the sharpening stones below which can be used with water or oil



However – I have on order 4-Sided Diamond Sharpening Stone which I was impressed with during my FS training



I have also discovered - Japanese whetstone Combination Grit 1000/6000 & Nagura Stone -

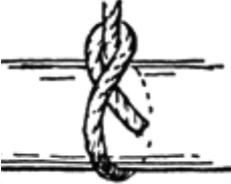


These are expensive but would I like to be able to experience this method

The Stone is soaked in water only and the idea is to start with the highest grit, then work to finer grit and Nagura Stone residue

Notes – when sharpening its 5 to 8 strokes along the side of cutting edge

Start with high grit sharpening stone – hone with fine grit

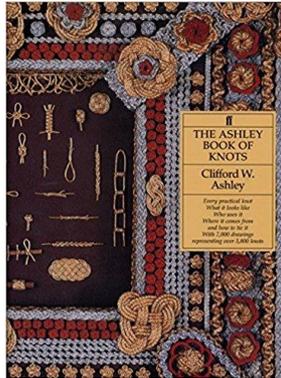
	How it can be taught
<p><b>Hitch 1</b></p>	<p>Half Hitch Tying</p>
<p><b>Half Hitch – On the bite</b></p>	<p>Form a loop around the object. Pass the end around the standing end and through the loop. Tighten into a Half Hitch which is designed to take a load (Arrow) on the standing end.</p>
<p><i>The half hitch is the start of a number of other hitches and is useful all by itself as a temporary attaching knot. It will hold against a steady pull on the standing part.</i></p> 	<p><a href="http://www.animatedknots.com/halfhitch/">http://www.animatedknots.com/halfhitch/</a></p>  <p>My Photo</p> <p><b>How it can be taught</b></p> <p>Show and repeat then have a go</p> <p>Relate to overhand knot below</p>  <p>*****</p> <p><b>Half Hitch Details</b></p> <p><b>Uses:</b> Ashley described the Half Hitch (<a href="#">ABOK # 50</a>, p 14) as "tied with one end of a rope being passed around an object and secured to its own standing part with a Single Hitch."</p> <p><b>Comparison:</b> The animation shows the close similarity between:</p> <ul style="list-style-type: none"> <li>• <a href="#">The Overhand Knot</a> – tied in the end of a rope;</li> <li>• The Half Hitch – attaches a rope to something, e.g., a Hitching Post;</li> <li>• <a href="#">The Half Knot</a> – a binding knot – first part of a <a href="#">Square (Reef) Knot</a>.</li> </ul>

	<p><b>Tying it:</b> As shown in the animation it can be capsized from looking like an overhand knot into the normal look of a Half Hitch. In this animation the second Half Hitch shows how it is customarily tied - wrapping it round the standing end and tucking it under itself.</p> <p><b>Two Half Hitches:</b> The first Half Hitch is nearly always followed by a second – or more. It is customary to pass the rope the same way around to make both Half Hitches. This creates a <a href="#">Clove Hitch</a> around the standing end. When the second Half Hitch is reversed it creates a <a href="#">Cow Hitch</a> round the standing end.</p> <p><b>Recommendations:</b> Although two Half Hitches do make a complete "Hitch", it is better to begin by first passing the rope around the post or bollard a second time to make the <a href="#">Round Turn and Two Half Hitches</a>. This is more secure and provides easier control of the load while tying the Half Hitches.</p>
<p><b>Hitch 2</b></p>	<p>Timber Hitch Tying</p>
<p><b>Timber hitch – Anchor knot</b></p>	<p>Pass the end of the rope around the pole and then around the standing end. Wrap the end around itself three times and tighten the knot so that the three turns are gripped against the pole.</p>
<p><i>This is an important hitch, especially for dragging a heavy object like a log. It will hold firmly so long as there is a steady pull; slacking and jerking may loosen it. When it is used for dragging, a simple hitch should be added near the front end of the object to guide it.</i></p> 	 <p>My Photo</p> <p><b>How it can be taught</b></p> <p>Show and repeat then have a go</p> <p>*****</p> <p><b>Timber Hitch Details</b></p> <p><b>Uses:</b> The Timber Hitch is described by (Ashley <a href="#">ABOK</a> #1665, p 290) as much used for handling cargo "... for which it is very convenient, as it practically falls apart when pull ceases." It is also useful when towing a spar or log either afloat or on land. When used for this purpose, the Timber Hitch is often placed near the centre of the spar and a separate Half Hitch is dropped over the end of the spar to act as a guide.</p> <p><b>Other Applications:</b> The same hitch is known as a Bowyer's Knot because it attaches the end of the bow string on a</p>

longbow. It is also used to attach the strings on some stringed instruments including the ukulele and the guitar.

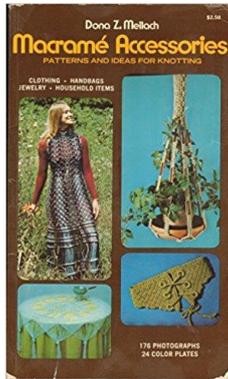
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The Ashly book of Knots referred to above and shown below is an amazing publication I have own since I was about 22 years old



referred to as ABOK

A lot of rope work that I can do, I have been self-taught from this and other book on macramé



	How it can be taught
<p><b>Hitch 3</b></p>	
<p><b>Clove Hitch</b></p>	
<p><i>This is one of the most widely used knots. Because it passes around an object in only one direction, it puts very little strain on the rope fibres. Tying it over and object that is open at one end is done by dropping one overhand loop over the post and drawing them together. The other method of tying it is used most commonly if the object is closed at both ends or is too high to cross loops over. The latter is used in starting and finishing most lashings.</i></p> 	 <p><b>How it can be taught</b></p> <p>3 different ways to tie this knot see below</p> <p>Show and repeat then have a go</p> <p>*****</p> <p><b>Clove Hitch with the End of the Rope Tying</b></p> <p>Pass the end of the rope around the pole. Continue over the standing end and around the pole a second time. Thread the end under itself and pull tight to form the clove hitch.</p> <p>*****</p> <p><b>Clove Hitch tying using Half Hitches</b></p> <p>Form a loop in the working end of the rope. Place it over the post. Form a second loop identical to the first. Place it over the post and tighten</p> <p>*****</p> <p><b>Clove Hitch using Loops Tying</b></p> <p>Form a loop in the rope. Then form a second one - "the same way up". Both loops should be identical. Cross the loops one above the other so they form a knot - instead of just two loops stacked on each other. Place the knot over the post.</p> <p>*****</p> <p><b>Alternatives:</b> In addition to tying it Using Stacked Loops, the Clove Hitch can also be tied Using Half Hitches and by Threading the End.</p>

**Caution:** The Clove Hitch (ABOK # 1245, p 224) was, originally, included here with the intention of condemning it. It does have two giant faults: it slips and, paradoxically, can also bind. It should be deeply distrusted when used by itself.

**Uses:** However, the Clove Hitch does have a few excellent applications: in the theatre it is used to adjust the height of stage curtains hanging from a bar; and in boating it can be used to initially position a fender hanging from a rail. Both are described in the section about the Clove Hitch tied by Threading the End.

**Dangers:** As stated above, the Clove Hitch's problems are slipping and binding:

- **Slipping:** I watched a friend trying to dock his 53' Hatteras. Each time the bow mooring line was handed to the marina assistant, he used a clove hitch to attach the line to the dock's post. The offshore wind was blowing the stern away so my friend used his engines to swing the stern in. Each time he did so the strain was too much for the Clove Hitch, which slipped undone. This process was repeated seven times despite increasingly forceful requests that some other knot be employed to secure the line. Reviewing the events later it became apparent that the assistant was using the only knot he knew. **It is not a knot to be used alone.**
- **Binding:** Finally, if you make the knot secure by stacking on additional Half Hitches, i.e., multiple clove hitches, then you are inviting a major strain to cause the earlier turns to bind tightly and become impossible to untie. So, if on a boat you feel an urge to use a clove hitch - resist! Choose something else unless you are merely hanging a fender

**Alternatives:** There are good alternatives available:

**Mooring:**

- A Round Turn and Two Half Hitches
- Rolling Hitch
- Bowline
- Cleat Hitch

**Temporary whipping for a frayed rope end**

- Constrictor Knot

**Paradox:** When you tie this round turn and two Half Hitches, in the process you actually create a clove hitch round the standing end!

**Knot 1**

**Reef or Square Knot**

You can loosen the square knot easily by either pushing the ends towards the knot or by 'upsetting' the knot by pulling back on one end and pulling the other through the loop.



**Square Knot (Reef Knot) Tying**

Take two ropes and cross them (red over blue) to form a half knot. Cross them a second time (red over blue again) and pull the ends tight to form the Square Knot.



My Photo

**How it can be taught**

Show and repeat then have a go

Right over left and under – left over right then under, is a saying I remember for teaching how to tie a reef knot, however it does have to be done with a demonstration

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**Square Knot (Reef Knot) Details**

**First Knot:** The Square (Reef) Knot ([ABOK # 1402](#), p 258) is usually learned when we tie the laces on our first pair of shoes. Admittedly it is usually a bow that we tie - but the underlying knot is a Square (Reef) Knot. We also learn just how unsatisfactory the knot is. It slips, it comes undone, it jams, and it is all too easy to tie a **Granny** instead which behaves even less well.

**Purpose:** It is intended to be a binding knot and, tied in the right material against a curved surface, the first Half Knot may bind – but it cannot be trusted. That is why surgeons use an extra turn in the first Half Knot – to achieve the binding required while they prepare the second Half Knot.



<http://www.animatedknots.com/reef/index.php>

Square Knot Capsizing

**Caution:** This picture demonstrates how even a "Stack" of Square Knots can capsize and pull undone. These photographs were created by pulling on the ends of the red rope. *"There have probably been more lives lost as a result of using a Square Knot as a bend (to tie two ropes together) than from the failure of any other half dozen*

**knots combined.**" ([ABOK](#) page 258). **Never** use it for critical loads.

**Uses:** Nevertheless, the Square (Reef) knot has many uses but not where safety is critical, e.g., you can tie a sail cover over a sail; you can tie the string on a gift; and you can tie the laces on your shoes (if they still come with laces). It is also one of the many knots used in macrame. More importantly, the experience of tying a Square Knot teaches the fundamental process of tying a Half Knot or Half Hitch.

**Variations:** The final Frames of the Animation show several variations: the **Granny** is shown because it is so commonly tied in error; the **Double Throw Knot** or **Surgical Knot** is very commonly used by Surgeons as the first part of a Ligature; and the **Thief Knot** is included for interest as the final frame, even though it is a useless knot. When the Square (Reef) Knot is used it is common to add additional Half Knots as security - a tribute to how unsatisfactory a knot it is. A better alternative may be to use two Surgeon's Half Knots, which make better binding knots for each stage and a secure final knot. When the second Half Surgeon's Knots is tied as a bow, it makes a Secure Shoelace Bow.

The Square (Reef) knot can also be tied using bights (loops). For example, to use up long shoelaces, the knot can be tied with loops from the start. This means the final "bow" cannot be untied by pulling the ends - but it makes a secure knot.

	How it can be taught
<p><b>Lashing 1</b></p>	<p><b>Shear Lashing Technique</b></p> <p>Tie a clove hitch around one pole. Wrap both poles with a simple lashing. Wrap the lashing with a two or three tight frapping turns. Tie off the end with a clove hitch. Spread the poles to make shear legs</p>
<p><b>Sheer Lashing</b></p>	
<p><i>A lashing used to produce sheer legs or alternatively a lashing to secure poles or spars end to end. A sheer lashing is often sued to bind adjacent poles together. It is also a good way to reinforce a broken or weak pole. The frapping turns used to tighten the lashing may be omitted and replaced with wedges inserted between the poles. A loose or Sheer Lashing made around the ends of two poles will allow the poles to be opened out and used as an A-frame. It can also be used to form a tripod.</i></p> 	  <p><b>My Photos</b></p> <p><b>How it can be taught</b></p> <p>First and foremost, this lashing begins and ends with a clove hitch so that is the first stage of teaching or recapping</p> <p>I usually lift the working end of the legs up so as not to have to lift the poles each time we go around the two legs</p> <p>I usually have a wooden tent peg and mallet available to use as a wedge between the legs so the frapping turns can be tight</p> <p>It would then be a simple demonstration, repeat and practise</p> <p>*****</p>

### Shear Lashing Details

**Use:** The Shear Lashing ([ABOK # 2108 - 2110](#), p 342.) is used to lash the ends of two poles together. The other ends are separated to make a pair of Shear Legs.

**Spelling:** This Lashing is widely spelled both "*Shear*" and "*Sheer*". There seems to be little agreement and some writers use both on the same page. "*Shear*" was selected here because it was Ashley's choice.



### Shear Legs

**Tying it:** The two poles are laid side-by-side and an initial Clove Hitch is tied round one pole. A Round Lashing is then tied around the two poles near one end. Then two or three Frapping turns are tied binding the lashing turns tightly. Starting these turns can be awkward. It is sometimes necessary to spread the legs apart to open up the poles to make it possible. The Lashing is completed with another Clove Hitch. The other ends of the poles are then separated to make a pair of Shear Legs.

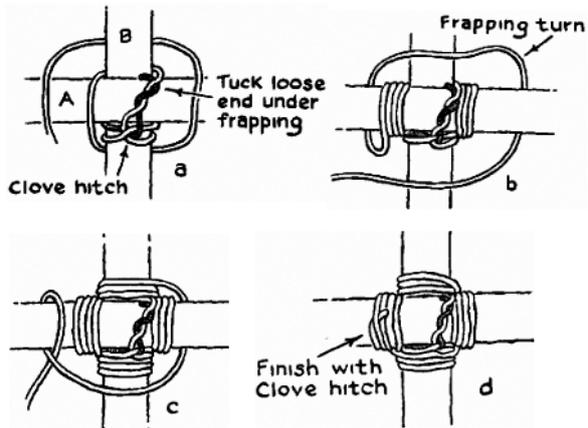
**Use:** Shear legs support weight. A single pair can be controlled with a rope as they lean over a stream to lift a bucket. A series of them can support an aerial walkway.

**Frapping Turns:** The turns surrounding the lashing at right angles exert a tightening effect on the lashing. These turns are known as Frapping Turns. Pulling them as tight as possible makes the Lashing more secure. Various techniques are recommended, but I'm indebted to Dana Holgate for the following: wrap the rope around a stick, stand on the pole, bend your knees, hold the stick across your thighs and then pull by straightening your legs.

## Lashing 2

### Square Lashing

Used to fasten two spars or poles together. An essential Forest School lash. The tightening bind is called frapping.



### Square Lashing

Start with a Clove Hitch around one pole. Twist short end around long and wrap the rope around both poles, alternately going over and under each pole about three or four turns. Tighten the lashing by surrounding it with three or four frapping turns. Finish with two or three tight half hitches.



My Photos

### How it can be taught

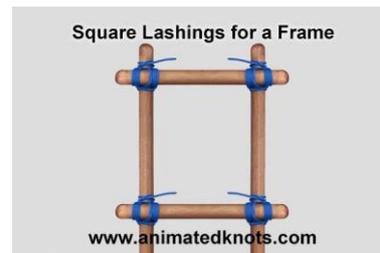
First and foremost, this lashing begins and ends with a clove hitch so that is the first stage of teaching or recapping

It would then be a simple demonstration, repeat and practise

Because I have made aerial runways, bridges and 8 metre towers using knots and lashing, I always put an extra half hitch on the clove hitch's and steel spike, (90 cms) and guy down

\*\*\*\*\*

### Square Lashing Details



Square Lashings for a Frame

Square Lashings for a Frame

Use: The Square Lashing ([ABOK # 2114](#), p 343.) is used to bind two poles together. The lashing

is designed to be load bearing and can be used to create scaffolding. Although the two poles usually cross each other at 90 degrees, the Square Lashing may be used when the angle between the two poles is as little as 45 degrees,

Scouting: Square lashings can be used to make a rectangular frame as shown here. Many applications have been described including: making support frames; when two trees are close enough, a table can be supported by a pair of poles or branches lashed horizontally either side of the trees; a fence can be constructed by driving poles into the ground and then joining them with bars attached with Square Lashings; and a raft can be created by lashing bamboo poles across each other.

Tying it: The animation shows the preferred method of making this lashing. Turns are added internally around one pole and externally around the other. Here, each extra turn is added inside the previous one on the horizontal pole but outside the previous one on the vertical pole. This presents a flat array of turns to be surrounded by the Frapping Turns – and each turn will be subject to tightening.

Frapping Turns: The turns surrounding the lashing at right angles exert a tightening effect on the lashing. These turns are known as Frapping Turns. Pulling them as tight as possible makes the Lashing more secure. Various techniques are recommended, but I'm indebted to Dana Holgate for the following: wrap the rope around a stick, stand on the pole, bend your knees, hold the stick across your thighs and then pull by straightening your legs.

Alternative Finish: The final half hitches may be located on top of the Frapping Turns, i.e., add two more Frapping Turns in the form of Half Hitches.

PSFSP 1.5 Demonstrate how to make a range of different items using natural woodland materials and explain how this can be taught to a client group.

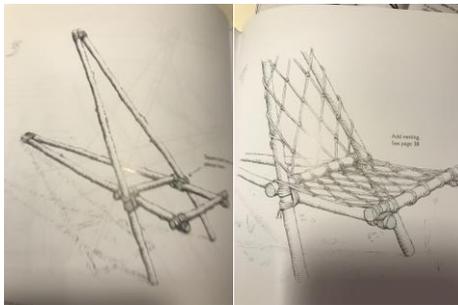
Please insert additional sheets as appropriate



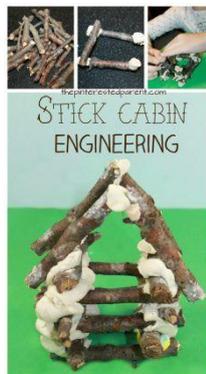
Item	Photo and description of process	
<p><b>Star</b></p>		<p>Loppers Tool Talk</p> <p>Collect and cut 5 sticks each around 30 cms long</p> <p>Possible Knife tool talk for cutting strung</p> <p>Clove hitch teach</p> <p>Square lashing teach</p> <p>Both using the cut sticks</p> <p>Make a V with two of the sticks</p> <p>Make an N, Make a W, then a WW or may be a W with an I</p> <p>Make a star shape then tie the last lashing</p>
<p><b>Book</b></p>		<p>Find a log about 20 cms long with a diameter of 7 to 10 cms or cut one</p> <p>Bow saw tool talk</p> <p>Billhook tool talk</p> <p>Split the log as many times as you wish with parallel cuts to form the pages and the cover</p> <p>Hand drill tool talk, knife tool talk</p> <p>Drill two holes about 8 cms apart down what is to be the spine</p> <p>Bind with string of your choice</p>
<p><b>Stool</b></p>		<p>find or cut a log about 30 to 60 cms long and around 15 to 20 cms in diameter</p> <p>Bow saw tool talk</p> <p>Drill the four holes need for the legs</p> <p>Agar tool talk and demonstration</p> <p>Find four strong sticks to make the legs</p> <p>Knife tool talk &amp; Loppers tool talk</p> <p>Lop &amp; whittle legs to size</p>

		<p>Found this too</p>
<p>Saw Horse or any other useful piece of camp furniture</p>		<p>Knots &amp; Lashings Teach Loppers, Saw, &amp; Knife tool talks Perhaps some diagrams of what is possible</p>

One idea I fancy having a go at is



And we have made some raised benches for around the camp fire as below and lashed them with ropes



And I think this would make a great activity as well

Shelter Type	Photo and description of process
<p><b>Kit shelter</b></p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  </div> <div style="width: 50%;"> <p>The top photo here shows a kit shelter made during the level 3 assessment week.</p> <p>The process is to choose the appropriate tarp for the job.</p> <p>Decide where you want to be.</p> <p>Locate suitable trees and anchor points for the ridge and corners.</p> <p>Because of the variety of tarps available, some with eyelets some with loops you may need to decide where the ridge is or going to be.</p> <p>With Kit shelters I would probably recommend being able to walk under them, but low enough to keep kit dry</p> <p>Pick where the ridge will be, get the tarp in position, tie out at least the four corners.</p> <p>Slant the tarp slightly for rain not to gather in the middle and for the water to drain off.</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;">  </div> <div style="width: 50%;"> <p>This next photo is an actual area at our forest School we made this weekend (20<sup>th</sup> August 2017).</p> <p>It shows a wood store, and I think this will also become the designated tool area and tool talk area – it is about 8 to 10 metres away from our main fire area and the tree canopy above is quite protective.</p> <p>We have also used it as an opportunity to collect water for dowsing fires, (not for first aid).</p> <p>On reflection – I think we need a slightly larger tarp and it needs to be lower perhaps with the water barrel near the wall and the tarp lower at the wall side to create and use the wall as shelter.</p> </div> </div>

**Low Shelter**



The two photos above are not my photos however they do show examples of shelters I have built in the past to sleep in

The process here would be to find an area where water cannot collect.

Clear the area of twigs, branches stones, and rocks.

Construct the shelter in the same way you would for a kit shelter, maybe with this shelter you would be able to peg the tarp straight into the ground.

The idea behind the shelter being low is to help keep as much heat in as possible during the night while you are sleeping.

**High shelter**



This is the phot of our high shelter at our forest school.

This I would say is the third or fourth attempt.

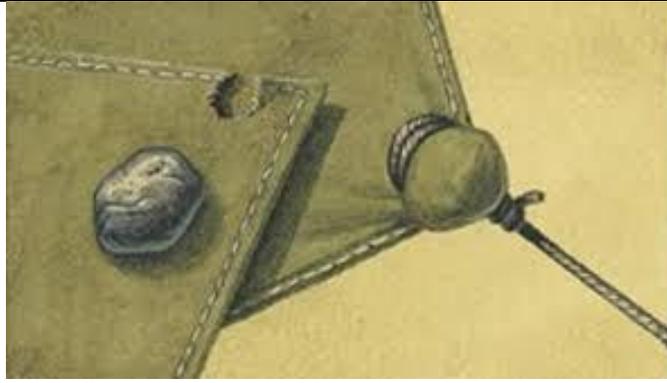
There is no tree canopy directly above the fire area.

We first started with 4 x 3.5 metre poles one at each corner pegged out – this worked well to begin with but collected rain and ripped eyelets out.

Our next attempt we used something like 25 to 30 metres of 8 mm sisal across the middle of the fire are to form a ridge for the tarp the corners were then tied with paracord to trees up to 15 metres away – which worked fine, but sisal is a funny rope it stretches, swells, shrinks, depending on the weather.

The rationale behind it was that, it is a natural rope and would have less of an impact on the environment, but it did not suit our needs.

In the end, I sacrificed an unused climbing rope I had at the back of my shed, which is so far working well to replace the sisal ridge, it moves with the weather and has stayed pretty permanent since July. We have only had to repair the corner eyelets on the tarp occasionally, by wrapping a small stone in the tarp and tying the guy around that. See picture below.



Our high shelter is around 3.5 metres above the ground and we have used 5 guy lines to the nearest trees, 2 on the side you can see in the photo and 3 on the far side.

Although we got there in the end, it was a complicated kafuffle but the principles are the same as a kit shelter, after some good reflection and as much as I hate clichés we did some ‘thinking outside the box’ if the trees you need to use are 20 to 30 metres apart, get a 50 m bit of rope and a lot of paracord . . .



Found these pictures on the internet of shelters I have use in the past.

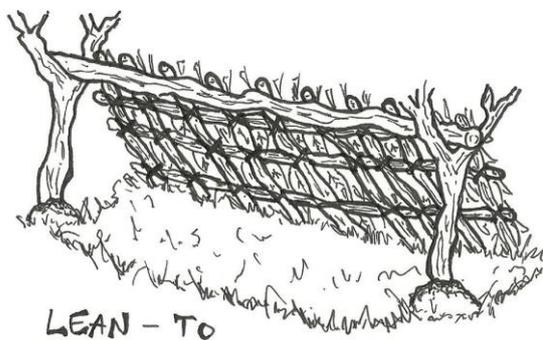
This first one here I would describe as a natural shelter, made from a fallen tree perhaps with a few branches and some string to form a structure and where lots of natural leaves and bracken have been randomly placed on top to form the shelter, so with the tree canopy above and the leaves and bracken it should be relatively water proof, with it being low it will keep the heat in and you should keep relatively

warm.

With this kind of shelter it is best to look for a place where water cannot collect and the materials are close hand to preserve energy.

Start with a frame which is quite close knit and cover with foliage.

Be mindful of ticks in this situation.



When our Forest School was based at Booth wood we built one of these as a wood store and used leave debris as a cover.

We also placed it between two trees and manage to fill the sides slightly

See the photos below

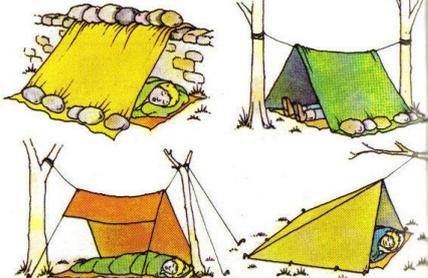


The session before building this, we made paracord bracelets and this was about their practical applications

The process here was locating the area to build such a shelter, decide on the height of the ridge. If I were sleeping in this I would have perhaps made it lower, however because it is for a wood store it was higher.

Locate the sticks, explain and show the young people what we are trying to achieve. This involve loppers and bow saws, so it was necessary to do tool talks and training around tool use. The shelter was built over three sessions.

**Bivouac shelters**



If you prefer to have some protection over you, try using a large waterproof sheet to make a bivouac shelter. A sheet of thick

polythene will do. It should be about 3 metres by 2½ metres. Sew loops of tape onto the edges for pegging them to the ground.

Found this interesting diagram while researching shelters, in particular the shelter against the Dry-Stone wall.

I slept in one of these in Wales, with our site having a Dry-Stone wall, and with us being able to have sleepovers it would be a way of accommodating more people or at least giving an extra option, natural materials are limited on our site and I would want to take away environments. This if managed correctly would enable, regular sleepovers without too much impact. Combined with the ideas below people have an opportunity to try many

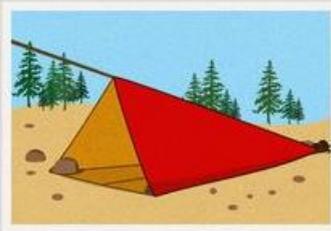
different shelters.

# TARP SHELTERS

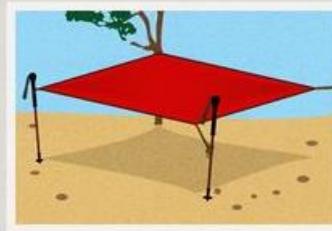
## WITH ONE TARP AND SOME PARACORD



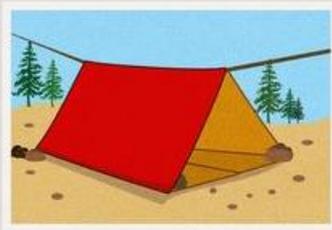
A-FRAME



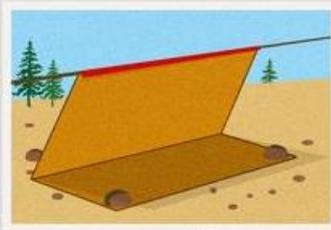
ARROWHEAD



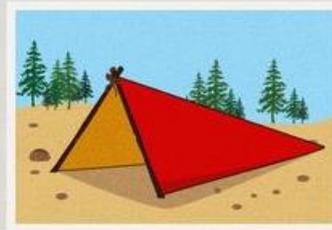
BASIC FLY



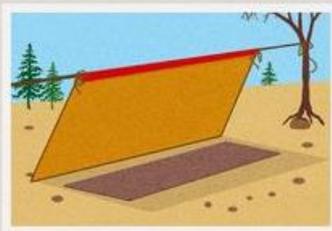
BODY BAG



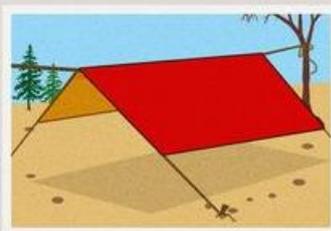
ENVELOPE



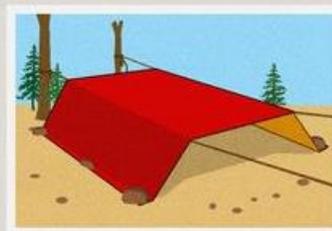
FOREST TENT



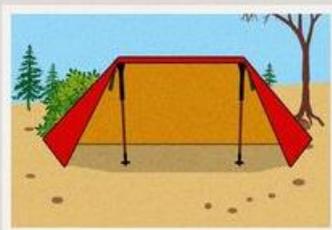
LEAN TO



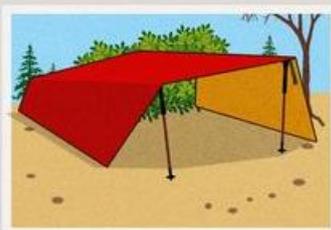
RAIN FLY



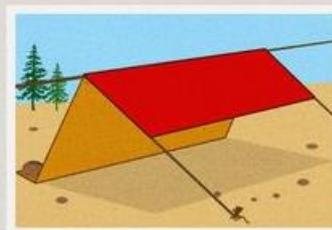
SQUARE ARCH



TREKKING POLE



TREKKING POLE 2 PERSON



WINDSHED WEDGE

## PSFSP 2 Be able to facilitate campfire management appropriate to a Forest School programme.

PSFSP 2.1 Demonstrate safe siting, lighting and management of a campfire and the surrounding area and explain how this can be taught to a client group.

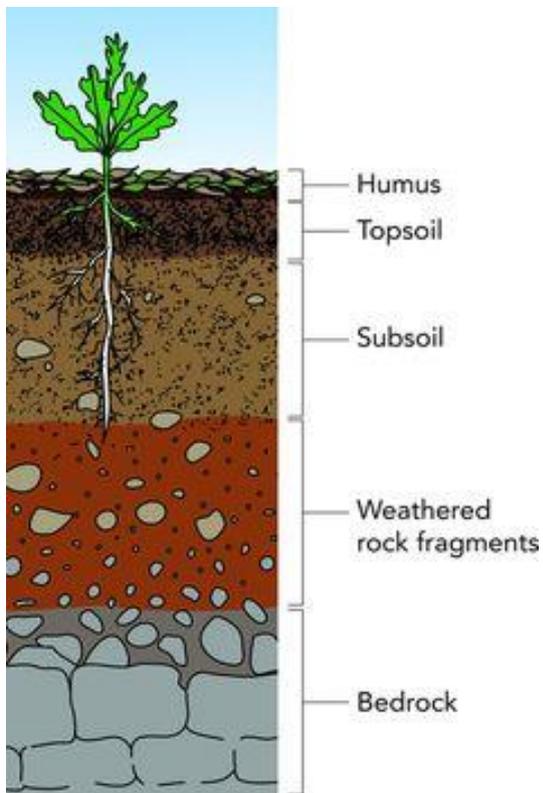


### Factors affecting the selection of a site for a fire

#### Bedrock and soil types

I have learnt

Where Bedrock sits in relation to the earth's surface – Diagram below



There are three types of bedrock – see explanations below

### Igneous Bedrock



**Coarse-grained igneous bedrock**

Igneous bedrock is formed from magma or lava that is cooled. The rate of cooling and minerals introduced when the magma is still in its liquid form determine the type of igneous bedrock formed. Igneous rocks are mainly made up of silicate. The common types of igneous rocks include the glass-like basalt, which is fine-grained, and the coarse-grained granite, which is used in homes as kitchen and bath countertops.

### IGNEOUS ROCK FACTS

Igneous rocks are formed from hot molten liquid called magma.

There are 2 groups of igneous rock: *intrusive* and *extrusive*

When magma crystallizes within the Earth's surface *intrusive* rock results

When magma crystallizes at the Earth's surface *extrusive* rock results

Igneous rocks are also classified by grain size: *fine grained* or *coarse-grained*

Coarse-grained igneous rock is typically intrusive and usually lighter in color

Fine-grained igneous rock is typically extrusive and usually darker in color

## Sedimentary Bedrock



**Limestone Sedimentary Bedrock**

Sandstone, limestone, shale, mudstone, chalk, salt stone, dolomite and gypsum are all common types of sedimentary rocks. Sedimentary bedrock is formed when smaller particles are bonded together either by chemical bonding or a combination of chemical reaction and pressure. The pressure is typically due to water or soil on top of the forming sedimentary rock. Chemical bonding is a result of different chemistry reactions. The most common chemical bonding in sedimentary rock is calcium carbonate. Coal is a subcategory of sedimentary rock. Coal is typically formed in swamp or peat beds where trees and other vegetation cover the bed and energy from the sun is absorbed, increasing the potential energy of the material. The peat bed is then covered while heat and pressure is applied until coal results.

## SEDIMENTARY ROCK FACTS

Sedimentary rocks are formed from particles of preexisting rocks

Sedimentary bedrock is divided into 2 groups: *detrial and chemical*

Detrial sedimentary rock occurs after physical break-down of old rocks and particles that form new rock.

chemical sedimentary rock is the result of chemical break-down of old rocks and particles that form new rock.

The 3 most common types of sedimentary rocks are limestone, shale and sandstone.

Shale is the most common sedimentary rock.

Sedimentary rock is found in only about 5% of the Earth's crust.

75% of the exposed bedrock at the Earth's surface is sedimentary rock

## METAMORPHIC ROCK FACTS

Metamorphic rock is classified by 3 main formation components including: *mineral composition, heat during formation and pressure during formation*

The temperature and pressure needed to create metamorphic bedrock results in a very strong rock that resists erosion.

There are two sizes of metamorphic rock formations: *regional and contact*

Regional metamorphism occurs over a large region, such as when two continental plates collide.

Contact metamorphism occurs over a small region.

Carrara marble from Italy is considered the most perfect marble in the world. Many famous sculptures were created using Carrara marble.

Common types of metamorphic rock: marble, gneiss, slate, schist, phyllite, mica, serpentinite

### Metamorphic Bedrock

Metamorphic bedrock is formed when igneous, sedimentary, or other metamorphic rocks are changed by experiencing high amounts of heat and pressure. Formation of metamorphic rock may also include mixing with hot fluids. During formation, the rocks experience high heat, but not enough to cause the rock to melt. This type of bedrock is typically formed deep underground or in locations where large bedrock plates are smashing together. Metamorphic bedrock gives geologists (scientists who study rocks) clues about how it was formed. Geologists can sometimes figure out how the land was formed by studying the metamorphic rocks in an area. Some of the most useful, and also most beautiful types of rock are metamorphic bedrock.

[sciencewithkids.com](http://sciencewithkids.com)

If you look at page 10 of unit 1 – we have already discovered that our forest school site as is most of Charnwood lives on an igneous bedrock and from the evidence of the rocky outcrop on the site we know the rock is granite

Soil types – There are 6 main types shown below



This chart from the forest school hand book is a useful guide to how flammable a certain type of soil is

See Appendix 8 - Weather and fire in peat soils for more information around Peaty Soil

Clay	<i>Non-flammable</i>	The general non-technical rule is if the soil is dense with little air in, it is less likely to catch.
Stony soil	<i>Non-flammable</i>	
Brown muddy soil	<i>Non-flammable</i>	
Peaty	<i>Flammable</i>	
Light fluffy, woody	<i>Flammable</i>	
Leaf litter	<i>Flammable</i>	

At our St Joseph's Site, the soil holds a water and after a heavy rain fall you can see where the humus has been washed away, this is a similar state of affairs at our Shepshed Site, this tends to lead me to the conclusion, that with both sites having natural water features, that the soil is mainly clay based and non-flammable.

At St J's we have a ground fire in the Forest School way, approximately 1 metre square surrounded by logs

At Shepshed we use Fire pits such as this one



In particularly peaty areas I have used Alter fires similar to this or the half barrel type



#### **Wind direction**

I have taught over the years when setting up a camp site to be mindful of wind direction and the placing of cook tents, sleeping tents etc.

The general rule is to figure out the wind direction and keep tents clear in the direction of the smoke.

Now what I have just found interesting is that both sites do have a prevailing wind which goes in a northern direction.

At Shephed we use benches around the fire, easy to move so people aren't in the smoke, more difficult at St Joseph's with logs which take a bit of effort to move.

#### **Health and Safety of the group**

First thing we do is set a first aid area this contains a first aid kit, burns kit, fire blanket, bucket and fresh water supply – this is pointed out to all participants

Only a maximum of four to six people around the fire.

When not using the fire sit on the designated seats.

Use fire resistant gloves when working with the fire.

Always use the respect position around the fire.

#### **Other factors e.g. water availability, size of fire etc...**

Long hair management - Anything dangling from the person, scarves, coat undone

Footwear – covered feet

Size of fire/managed fire, we usually have a family in charge of the fire for the session

Only use the fuel that is needed to complete the task

Manage marshmallow sticks – children usually come back with a stick that is too short

Fresh water in 10 litre containers – usually 3 to 5 about the area

500 ml of water available for drinking - Hand sanitizer available

### Lighting a fire



*“Do not try to satisfy your vanity by teaching a great many things. Awaken people’s curiosity. It is enough to open minds, do not overload them. Put there just a spark. If there is some good inflammable stuff, it will catch fire” – Anatole France*

Describe the elements of the fire triangle and identify the qualities of the following;

Fire Triangle	
	<p>Found a nice example of a diagram here that explains the Fire Triangle in a simple way</p> <p>The Fire triangle is mentioned at least once during our session which involve the need for a fire, I even go over it simple terms for the little ones.</p>
Tinder	
	
<p>Tinder is the dry flammable fuel you use to get your fire going</p> <p>Straw</p> <p>Fairy Blankets</p> <p>Silver Birch Bark</p> <p>Dry leaves</p> <p>Wood shavings</p> <p>Fluff from plants Dandelion head, Willow</p> <p>Punk</p>	
Kindling	
	
<p>Small dry twigs that will take the flame from the tinder</p>	

## Fuel



Fuel needs to get progressively larger and it needs to be prepared before starting to light the fire

## How to identify dry standing deadwood

Here are some ways to identify deadwood.

- It's brittle. Try bending it. If it breaks, it's dead.
- There are no buds or leaves. This may not be helpful in spring, but if there's no growth by summer time then the branch is probably dead.
- It's a different color or texture. This usually is only a subtle difference, unless the branch has been dead for a long time (in which case it's pretty obvious).
- It's warm to the touch in summer. Live wood is cool.
- You can see a spot where the branch is clearly bent or broken. It's likely dead beyond that point.

You'll often read about the "scratch test" as a way to identify deadwood. This involves scratching off the bark (using pruners or a sharp object) to see if the wood below is grey (dead) or green (living). True, this is a clear test of whether or not the wood is still alive. But only do it if you're pretty sure the branch is dead; scraping off the bark creates a wound that saps the plant's energy and leaves an entrance for disease and decay.

<http://pruningguide.com/identify-deadwood/>

Other things to consider can be seen in appendix 9 - A guide to managing deadwood in Forestry Commission forests

## How to identify punk

Punk Wood from all species of trees should work fine as a tinder once charred. Punk Wood is usually of a whitish colouring but it can also be other colours. Punk Wood in trees is Dry Rot and is caused by *Serpula lacrymans*, which is a wood-destroying fungus. Punk Wood that is completely formed, is light in weight, soft to the touch, and spongy. That is it can be squeezed a little between your fingers.



<http://woodsrunnersdiary.blogspot.co.uk/2013/02/more-on-punk-wood.html>

### Types of fungi that can be of use

The one I am most familiar with is King Alfred's Cake

See Appendix 10 - Piper Wood - Ash Tree - King Alfred's Cakes

A factsheet I put together to help me and small group find King Alfred's Cake



I have also found this amazing resource on the internet – please look at Appendix 11 - Fungus (As Tinder)

Horse Hoof Fungus

*Fomes fomentarius* occurs throughout much of the northern hemisphere. It grows on various species of trees. At more northerly latitudes the brackets are usually found growing on dead birch (*Betula* spp.) Further south the fungus is often hosted by beech (*Fagus* spp.) The brackets are the fruiting body of the fungus and are perennial. They grow slowly, adding a growth ring each year, and can live up to 30 years.

<http://paulkirtley.co.uk/2011/easy-way-to-use-fomes-fomentarius-as-tinder/>

I have to find some of this now . . .



### What can be done if resources aren't available

Rub two Boy Scouts together

Bow Drill - Hand drill - Fire plough



Water Bottle - A real survival-scenario type method of making fire using a basic water bottle as a lens. Just make sure you start your fire before drinking your water.

Balloons and Condoms - Similar to using a water bottle, this method uses a clear balloon or condom to hold water and form a focusing lens.

Fire from Ice - It's possible to use a chunk of ice to form and shape a lens to then create fire

The Soda Can - Using the bottom of a can to create a focusing mirror, one can create fire with this everyday common material.

<https://www.peakprosperity.com/wsidblog/79894/10-ways-make-fire-without-matches>



**Quick Methods**

Matches - Matches will light small kindling, but they will also light a good shred of silver birch bark giving you a bit more time than with just a match.

Fire Lighters – it all depends I think on what is the sessions learning about . . .

Petroleum Jelly - I have never used petroleum jelly and probably never will.

Zippo – wind proof, life time guaranteed lighter

Candles – an old scout leader friend of mine, and I mean old, I think he knew Baden Powell, used to carry around with him an old film canister, made from tin/mettle. It had a screw top lid.

In it he carried a candle cut to the size of the canister and down the side of the candle a dozen or so matches.

He said here look at his, and he pulled out his pocket a film canister with matches and a candle. I happen to come across some canisters at an Army Surplus, been in the shed for 20 years, I'll get around to it eventually . . .



Corrugated cardboard and wax tinder box



In a nutshell, Find yourself a old tobacco tin, melt loads of candles, cut corrugated cardboard to the width of the tin, fill the tin with the card, roll it and pack it in so the corrugations can be seen, put a candle wick in the middle, fill with the wax let it cool, replace the lid.

You now have an instant fire starter. Retrieve tin from fire and re use

Even with these methods, it is still about preparation and having you Tinder, Kindling and Fuel ready to go.

## Magnesium blocks or Strikers

We have various types shown below



We have found the orange strikers to be the most effective when teaching young people, it has a longer piece of magnesium and enables young people to be more proficient.

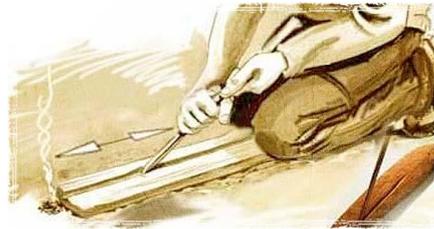
We teach to remove the black paint from the strip, then find the straight edge on the striker with a lip. Use the whole length of the magnesium and strike down firm and hard. . .

We also teach I suppose it could be called priming, by putting a few scappings in to the tinder before the main strike.

## Natural resource methods e.g. bow drills

I have considered these idea in some depth and discovered

Bow Drill - Hand drill - Fire plough



All these methods work better with a certain type of wood, however in a survival situation you may have to make do with what you have and what is to hand

I will have a go with these methods before using them at Forest School with the correct wood and with what is to hand.

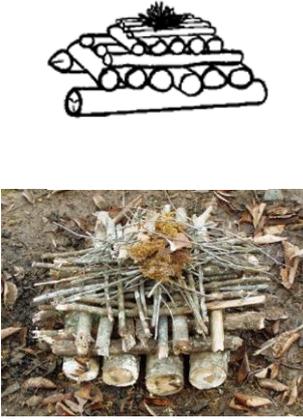
Appendix 12 is an excellent guide to the bow drill

## Char Cloth

See the video at <https://www.youtube.com/watch?v=WpMvuST3OMY>

Or there is also a link at <http://aboveandbeyondcic.org/fs-portfolio>

My Char Cloth Adventure – made by me . . .

Fire Lays	Process	
<p data-bbox="199 360 252 389"><b>Tipi</b></p> 	<p data-bbox="609 360 981 929">The simplicity of the Tipi is hard to beat. This cone of sticks has a great fuel-to-air ratio, which equals a great burning fire lay that is quick lighting and dependable—even with damp materials. Tipis can be built one stick at a time (a lot of trouble) or you can form the cone in your hand as you collect the sticks, stuffing some tinder into the center of your cone and setting it open-side-down when you're ready to light it.</p> <p data-bbox="609 1003 880 1032"><a href="http://www.outdoorlife.com">www.outdoorlife.com</a></p>	<p data-bbox="1013 360 1157 389"><b>Advantages</b></p> <p data-bbox="1013 409 1364 616">PROS This is an efficient and effective fire lay in a wide range of conditions, and can be made from a wide variety of materials.</p> <p data-bbox="1013 636 1189 665"><b>Disadvantages</b></p> <p data-bbox="1013 685 1380 891">CONS Sometimes they fall over, either before or after they're lit. Sometimes the center burns out before the sticks on the perimeter ignite.</p>
<p data-bbox="199 1117 279 1146"><b>Waffle</b></p> 	<p data-bbox="609 1120 981 1220">Also known as the Log Cabin fire in the US and the Upside-down fire by Aborigines</p> <p data-bbox="609 1240 981 1344">Build layers of logs as in the picture and then light a fire on the top of the stack</p>	<p data-bbox="1013 1117 1157 1146"><b>Advantages</b></p> <p data-bbox="1013 1167 1380 1196">Great idea if the ground is wet</p> <p data-bbox="1013 1216 1316 1283">Could use wet logs at the bottom so dry out</p> <p data-bbox="1013 1303 1316 1406">Good for cooking on as it burns in on itself creating perfect embers</p> <p data-bbox="1013 1426 1380 1529">You don't have to keep too much of an eye on it as all the fuel is there</p> <p data-bbox="1013 1592 1189 1621"><b>Disadvantages</b></p> <p data-bbox="1013 1641 1348 1709">It takes a while to build and requires a lot of materials</p> <p data-bbox="1013 1729 1284 1758"><a href="http://www.outdoorlife.com">www.outdoorlife.com</a></p> <p data-bbox="1013 1778 1364 1948">I wouldn't say that was too much of a disadvantage though – you have to collect the wood at some point, Mr Outdoorlife.com . . .</p>

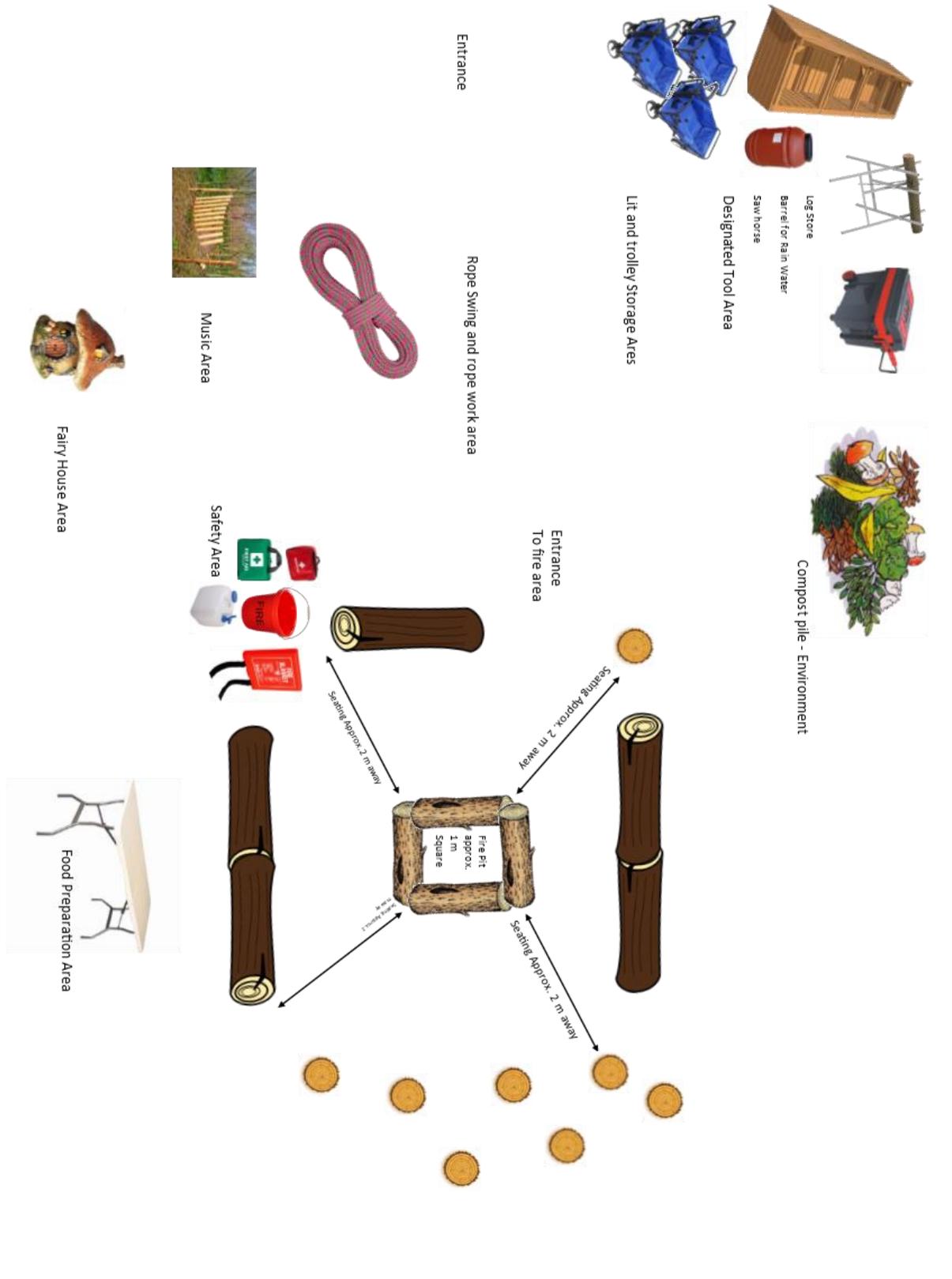
Other	The Centre Pole	<b>Advantages</b>
 	<p>Tired of your fire lays falling down on the job? Grab a thumb-thick dead stick about a foot long. Stab that stick into the ground in the center of your fire pit. Place a ring of tinder around it, and lay kindling over the tinder and against the central pole. The result is a very sturdy tipi shape that won't fall over.</p> <p><a href="http://www.outdoorlife.com">www.outdoorlife.com</a></p>	<p><b>PROS</b> Very stable and good for kindling materials that are having trouble standing up on their own.</p>
		<b>Disadvantages</b>
		<p><b>CONS</b> The central post interrupts the air flow in the heart of the fire lay.</p>
	<p><b>The Lean-To</b> Sometimes you can't make the wheel any rounder. The classic lean-to fire lay is quick to assemble and effective under a wide-range of conditions. Grab a large hunk of firewood or, better yet, a large, dry curled-up slab of bark. Lay your kindling perpendicular to the log or edge of the bark, toss some tinder underneath, and light it up.</p> <p><a href="http://www.outdoorlife.com">www.outdoorlife.com</a></p>	<p><b>PROS</b> It's quick to assemble, and it can be made with a frugal amount of material.</p> <p><b>CONS</b> It needs to be oriented into the wind for decent results, otherwise it won't have good air flow</p>
	<p><b>The Lever Bar</b> Ever wanted to have better control over the air flow in a fire lay? The lever bar can help. Select a stick that is a little over a foot in length, and thicker than your thumb. Prop one end on a small rock and let the other end lay on the ground. Lay kindling sticks on top of the big stick, and insert tinder underneath. Light the tinder and then raise the big stick by its end to introduce more airflow. While holding the end of the lever, raise or lower the stick as needed to</p>	<p><b>PROS</b> You control the air flow, which can be handy in wet or windy situations.</p> <p><b>CONS</b> It requires a lot of attention and manipulation. If you monkey around with the lever too much and the flame die out, you'll need more materials to get it going again.</p>

	<p>increase or decrease the airflow to the tinder. This air flow manipulation can take the place of blowing on the kindling if the materials are slow to burn.</p> <p><a href="http://www.outdoorlife.com">www.outdoorlife.com</a></p>	<p><b>PROS</b> Can be made with short, broken, or chunky materials.</p> <p><b>CONS</b> It's a slow burner and doesn't breathe as well as the other fire lays.</p>
	<p><b>A-Frame</b> This fire lay can be built starting with a tripod arrangement of three forked sticks, or you can poke one stick into the ground to act as a beam that will hold up the other twigs.</p> <p><a href="http://www.outdoorlife.com">www.outdoorlife.com</a></p>	<p><b>PROS</b> Burns as well as a tipi fire lay and the sturdy frame can support flimsier or looser kindling materials.</p> <p><b>CONS</b> It takes longer to build than a tipi.</p>
	<p><b>The Bundle</b> Sometimes all you need to light a blaze is a bundle. This simple and portable fire lay involves a bundle of twigs, loosely bound with a flammable cord. Don't worry about burning up your good 550 cord, a strip of flexible tree bark or a twist of plant fibers will be strong enough to hold the bundle together (and it'll burn well). To use this</p>	<p><b>PROS</b> This is an easy way to transport your fire-lay materials, and it helps you to ration them in areas where kindling is sparse.</p> <p><b>CONS</b> It doesn't burn as well as other fire lays, due to the fuel being concentrated in only one strip</p>

	technique, create a wad or pile of tinder material and lean the bundle against it. Try to get the bundle on a 45-degree (or greater) angle. This will help it burn better than if it's lying flat.	
<p>Well I have to say that I have use all those different techniques over the years, not because I knew about them it was more of a needs must/trial and error.</p> <p>Now I know what they are called and the different uses . . .</p>		

**Management procedures of the campfire**

Draw a diagram or insert a photo of your campfire, identifying safe working areas, fire pit diameters, seating locations, windbreaks and emergency equipment storage



### Describe effective group management procedures

- We set up a Safety Area with - Fresh water, Fire Bucket, Fire Blanket, Burns First Aid Kit & Regular First Aid Kit
- We have a Fire lighting box, which contains the Heat Resistance Gloves and Flint and Steel
- We only have a fire if there is a need for one
- Fires are made at an appropriate size depending on what it is being used for
- What we like to have a Family running or in charge of the fire each time we have one
- We use the respect position
- We do not run or mess around within the fire seating area
- Marshmallows & Smores - 3 to 5 people around the camp fire – supervised
- Cooking – no more the 2 or 3 people involved in cooking
- All group is made aware of the Safety Area
- Permission go to the fire is sort from the Fire Managers
- It is OK to be seated around the fire to do other activities
- Do not step into the fire square

### Identify the safety precautions required for cooking and water boiling using Kelly kettles and pans

#### Cooking & Pans

- be very mindful of the above management procedures
- Fire resistance gloves to be used – everything will be hot, grill, tripod, handles
- No more than 2 or 3 people in the cooking team around the fire
- Be mindful of Food Hygiene requirements and refer to Food Hygiene Box Provided
- Use hand sanitiser provided
- Communicate clearly

#### Kelly Kettles

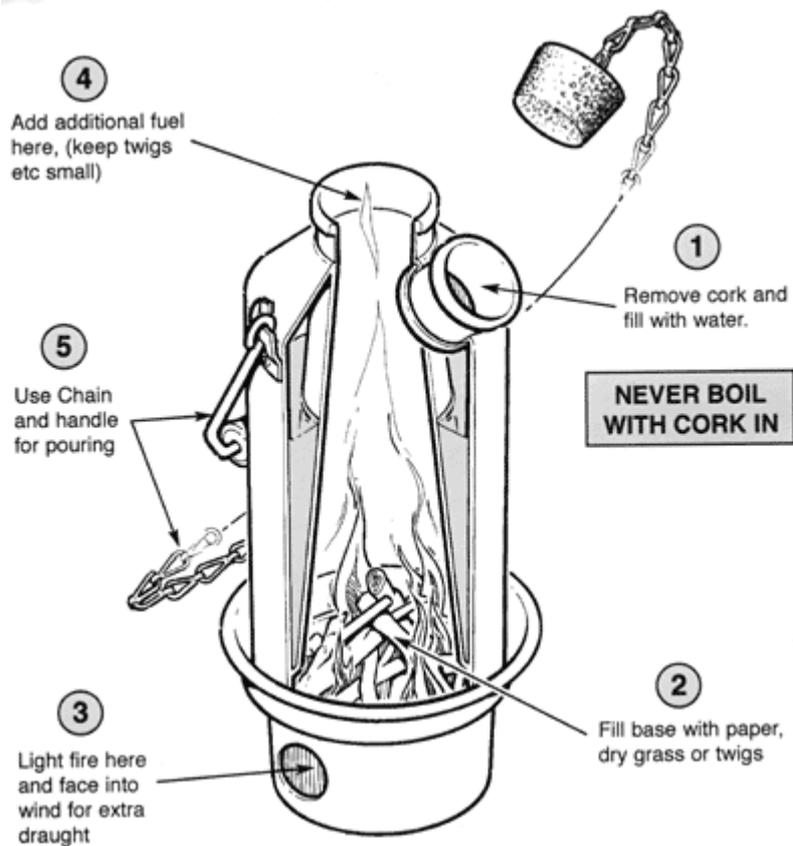
- If the Kelly kettle is not being used in the square fire area – create a new fire area with logs and or use a fire pit to work on away from the main fire area
- Be mindful of everything above
- When feed fuel to the Kelly Kettle use a fire-resistant glove
- Do not look directly down the chimney of the kettle
- Do not boil water with the bung in
- Take the kettle of the fire as soon as it starts to boil
- When lifting the Kettle away from the base be sure to hold the handle at 90° - Parallel to the ground.
- Pouring use the handle and chain to help pour

- Keep participants hands away from the pouring area
- Remember to not let anyone in front of the spout of a Kelly Kettle see diagram below, approximately 90° from the centre of the kettle with the spout facing away

See Appendix 13 – Kelly kettle instruction leaflet



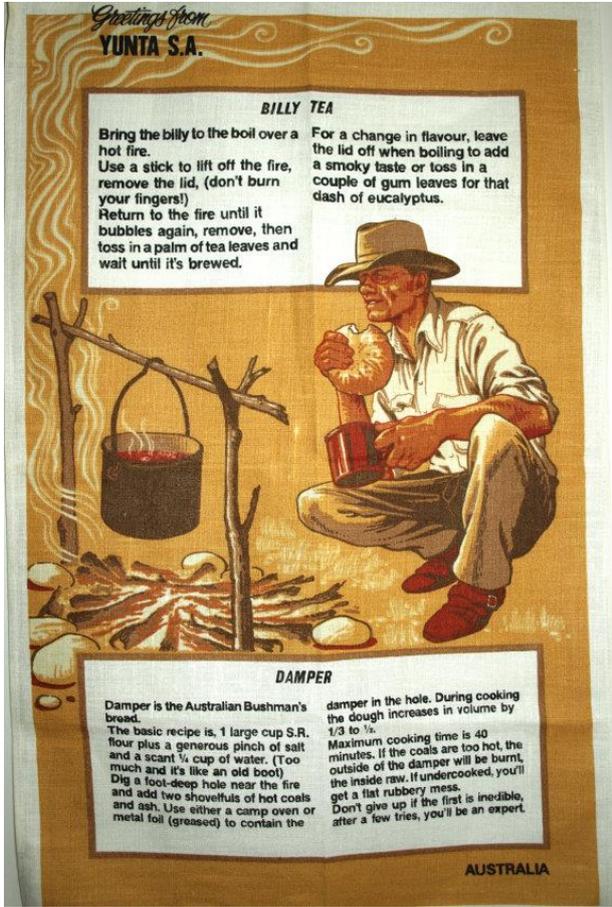
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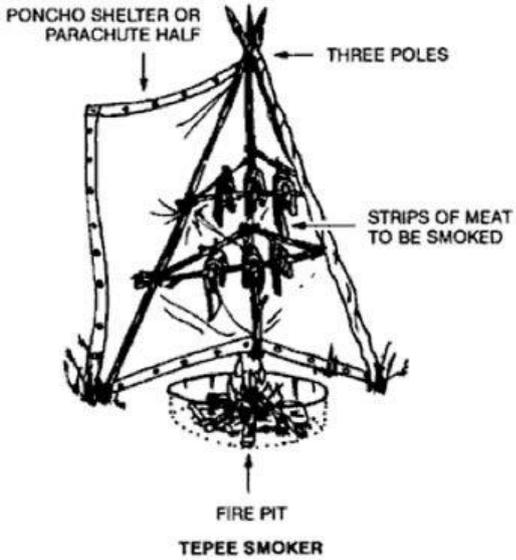
PSFSP 2.2 Demonstrate simple methods of cooking over a campfire with due regard to basic food hygiene and explain how this can be taught to a client group.

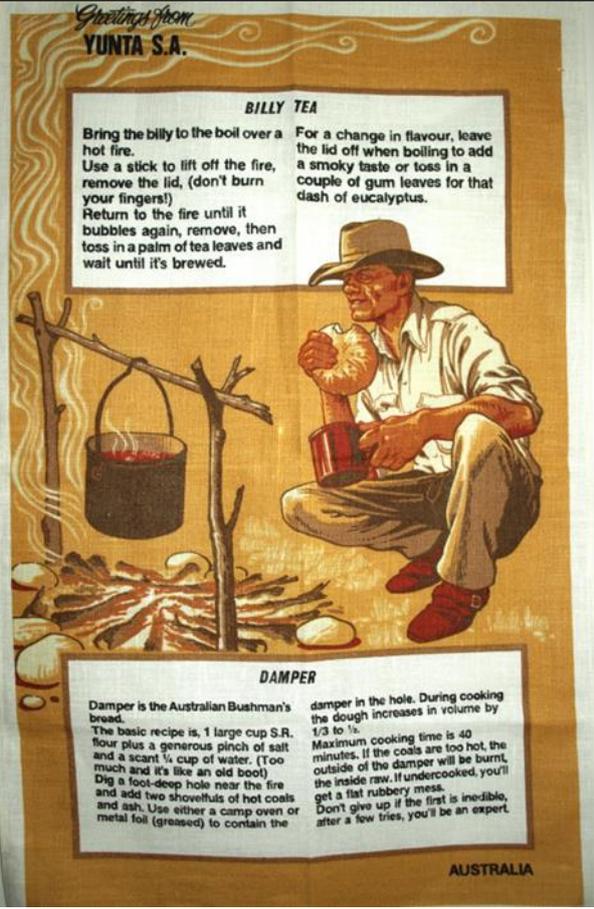


Safety & Management Mindfulness of the previous sections should also be taken in to account,

	Demonstrate method	Method of teaching
<p><b>Boil</b></p> <p>Boiling on a camp fire - What can be boiled?</p> <p>Water</p> <p>Billy Tea</p> <p>Veggies</p> <p>Pasta</p> <p>Soup</p> <p>Rice</p> <p>Stews</p> <p>I have put them in order of ease and have experiences all of these . . .</p> <p>Demonstration would be to boil a kettle or may be make some Billy Tea</p>		<p>Looking for a picture of Billy tea and found this a picture of my own t-towel with Billy Tea and Damper bread</p>  <p>It would just be a case of following the recipe</p> <p>This could also be done as twists on the end of a stick</p>  <p>Loaf in a Dutch oven</p>

		 <p>A Loaf in a Card board box oven</p>  <p>All these different ways I would introduce over several months</p>
<p><b>Roast</b></p>	<p>Now over the years I have roast Pigeon, Squirrel, Fish and Rabbit. Pigeon being my favorite</p> <p>However, the simplest thing to roast is a marshmallow or do we toast marshmallow?</p> <p>Part of the demonstration will be to find the right stick for the job.</p> <p>Knife tool talk to put a point on your stick</p> <p>Understanding the respect position</p>	 <p>Grab your stick and a Marshmallow</p> <p>Kneel in the respect position around the fire</p> <p>Red Glove on</p> <p>Stick the Marshmallow on the Stick . . .</p> <p>Roast the Marshmallow in the embers of the fire not the flames keep twisting for an even roast</p> <p>Remove from fire and squash between two chocolate digestive biscuits to melt the chocolate – devour making sure you have chocolate and stickiness across your face</p> <p>Note – two whole chocolate biscuits, not one broken in half like some Forest Schools do . . .</p>
<p><b>Steam</b></p>	<p>I usually use this method with stews in a foil packet – see below the graphic ‘Cooking up a Storm’</p> <p>Using the tent packet for steaming</p>	<p>Putting the stew together in the foil bag</p>  <p>The method for teaching here was a demonstration food prep and making the foil package</p>

		<p>Add the ingredients</p> <p>Potato</p> <p>Carrot</p> <p>Onion</p> <p>Oxo Cube</p> <p>Herbs, pepper</p> <p>Large splash of water</p> <p>Sauce – Tomato, brown or Worcester</p> <p>And anything else you want really</p> <p>Seal the packet leaving a little room place in the embers turn every 5 minutes over a period of 20 to 25 mins</p> <p>This has several names depending on where you are from, I call it Stew in a Bag, it can be called a Cowboys Dinner, (add Beans), Hobo Stew.</p> <p>If done correctly the food tastes great</p>
<p><b>Smoke</b></p>	<p>Now I can't say I have ever smoked food on a camp fire where I have consciously said let's smoke this kipper for breakfast . . .</p> <p>Now of course I will have to give it a go</p> <p>The Diagram shows a tepee smoker</p> <p>I will smoke some fish and see how it goes</p>	 <p>This idea will be easy to use with a tripod and an old bit on canvas I think rather than a poncho</p>
<p><b>Fry</b></p>	<p>Easiest thing to fry is a packet of sausages</p> <p>I usually get thin sausages so I have a good idea they are cook through</p>	<p>Stick them in a frying pan – you don't normally have to add oils or fat; the sausages should produce enough of their own to fry in</p> <p>Gloved hand and long tongues would be advisable</p> <p>Watch out for spiting fat</p> <p>Turn it into a good Australian Sausage sizzle</p> <p>Take a slice of bread fold it in half put your sausage in between splash of tomato sauce and away you go . . .</p>

		
<p><b>Bake</b></p>	<p>I think the Damper Bread Recipe here could be used for this section.</p> <p>Made this several times now and its always a bit of treat with jam</p>	 <p><i>Greetings from</i> <b>YUNTA S.A.</b></p> <p><b>BILLY TEA</b></p> <p>Bring the billy to the boil over a hot fire. Use a stick to lift off the fire, remove the lid, (don't burn your fingers!) Return to the fire until it bubbles again, remove, then toss in a palm of tea leaves and wait until it's brewed.</p> <p>For a change in flavour, leave the lid off when boiling to add a smoky taste or toss in a couple of gum leaves for that dash of eucalyptus.</p> <p><b>DAMPER</b></p> <p>Damper is the Australian Bushman's bread. The basic recipe is, 1 large cup S.R. flour plus a generous pinch of salt and a scant ¼ cup of water. (Too much and it's like an old boot) Dig a foot-deep hole near the fire and add two shovelfuls of hot coals and ash. Use either a camp oven or metal foil (greased) to contain the damper in the hole. During cooking the dough increases in volume by 1/3 to 1/2. Maximum cooking time is 40 minutes. If the coals are too hot, the outside of the damper will be burnt, the inside raw. If undercooked, you'll get a flat rubbery mess. Don't give up if the first is inedible, after a few tries, you'll be an expert</p> <p>AUSTRALIA</p>

# COOKING UP A STORM

## TENT PACKET (FOR STEAMING)



TEAR OFF A PIECE OF FOIL TWICE THE SIZE OF THE FOOD. PLACE THE FOOD IN THE MIDDLE.



BRING THE SIDES OF THE FOIL UP AND ROLL THE TOP DOWN, LEAVING SPACE BETWEEN THE TOP AND THE FOOD.



ROLL UP THE SIDES TO CLOSE THE PACKET.

## FLAT PACKET (FOR MEATS)



TEAR OFF A PIECE OF FOIL TWICE THE SIZE OF THE FOOD. PLACE THE FOOD IN THE MIDDLE.



BRING THE SIDES OF THE FOIL UP AND ROLL THE TOP DOWN SO IT'S TIGHT WITH THE FOOD.



ROLL UP THE SIDES TO CLOSE THE PACKET.

## EGGS & HASH



### INGREDIENTS

1-2 SCRAMBLED EGGS (UNCOOKED)  
GRATED CHEESE  
1 FROZEN HASH BROWN PATTY

### INSTRUCTIONS

WRAP IN TENT PACKET  
COOK 15 MINUTES

## VEGGIES & POTATO



### INGREDIENTS

SLICED RAW VEGGIES (SQUASH OR ZUCCHINI)  
FROZEN HASH BROWN PATTY  
SPICES

### INSTRUCTIONS

WRAP IN TENT PACKET  
COOK 20 MINUTES

## CHICKEN FAJITAS



### INGREDIENTS

SLICED CHICKEN BREAST  
SLICED ONIONS AND BELL PEPPERS  
TACO SEASONING

### INSTRUCTIONS

WRAP IN FLAT PACKET  
COOK 25 MINUTES, OR UNTIL CHICKEN IS DONE  
SERVE ON TORTILLAS

## HAMBURGER & VEGGIES



### INGREDIENTS

RAW HAMBURGER  
SLICED CARROTS AND ONIONS  
SPICES

### INSTRUCTIONS

WRAP IN FLAT PACKET  
COOK 25 MINUTES, OR UNTIL HAMBURGER IS DONE

*Write a procedure for the disposal of food, litter and waste water and include your policies and procedures.*

**Please see - Appendix 14 - Forest School Management of Waste Disposal**

**Also see Video 3**

PSFSP 2.3 Demonstrate how to safely extinguish a campfire, and explain how this can be taught to a client group



As the fire begins to die down

Use a stick to spread out the last of the embers to enable to burn out

Before you leave make sure there is adequate water to douse the fire

Slowly circle the fire with water working in to the centre of the fire

Ensure all the white embers/ash are out

Repeat if needed

The extinguishing of a fire can be a good time for the group to come together for one last time and reflect on the session

Each participant could douse the fire with a cup of water and give a few words about their learning

And of course, we can rub mucky ash water all over our faces . . .

This can be taught to participants by demonstration and letting them have a go at extinguishing the fire themselves.

PSFSP 2.4 Demonstrate how to leave a permanent fire site safe.



With our permanent fire

We usually put the fire out at the end of the session, with this not necessarily being the end of the session for staff and volunteers, when we have packed away the fire will be check for one last time that the fire is out

Any unused wood is returned to our wood store

Large pieces of charcoal and wood in the fire pit are left for our next visit

PSFSP 2.5 Demonstrate how to remove evidence of a temporary fire.

We tend to use fire pits in our temporary sites, but again the procedure is similar, but with any fire remains being scattered in the undergrowth

A temporary ground fire ashes can be scatted and woodland floor debris should be put back over the fire area