SCOUTS BUSHCRAFT

NATURAL TINDER AND FIRE LIGHTING

SKILLS GUIDE

- ✔ Identify Natural Tinder
- ✔ Prepare and Collect
- ✔ Flint and Steel
- ✔ Ferrocerium Rod
- ✔ Bow Drill
- ✔ Hand Drill
- ✔ Matches
- ✔ Types of Fire Lay
- ✔ Fire Safety
- ✔ Good Fire Practice







A PRACTICAL GUIDE FOR SCOUTS

SKILLS • TECHNIQUES • SAFETY • RESPONSIBLE FIRECRAFT

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INTRODUCTION TO NATURAL TINDER

WHAT IS NATURAL TINDER?

Natural tinder is dry, flammable material found in the outdoors that will catch a spark or small flame easily. It is the first step in building a successful fire in bushcraft and Scouting.



WHY IT IS IMPORTANT

- ☑ It helps you light a fire in the wild using natural resources.
- ☑ Builds bushcraft and outdoor skills.
- ☑ Teaches observation and knowledge of the natural environment.
- ☑ Gives you a reliable fire for warmth, cooking and safety.

EXAMPLES OF NATURAL TINDER



BIRCH BARK



DRY GRASS



BRACKEN



THISTLE DOWN



DEAD LEAVES



PUNK WOOD



IN THIS GUIDE YOU WILL LEARN

- How to find and identify natural tinder.
- The best natural materials to use.
- How to prepare and make a tinder bundle.
- Traditional fire lighting methods (flint & steel, ferro rod, bow drill and hand drill).
- How to build and light a fire safely.

SCOUT SKILLS

Use what you find, work with nature and leave no trace.

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UNDERSTANDING TINDER AND THE FIRE TRIANGLE

WHAT IS TINDER?

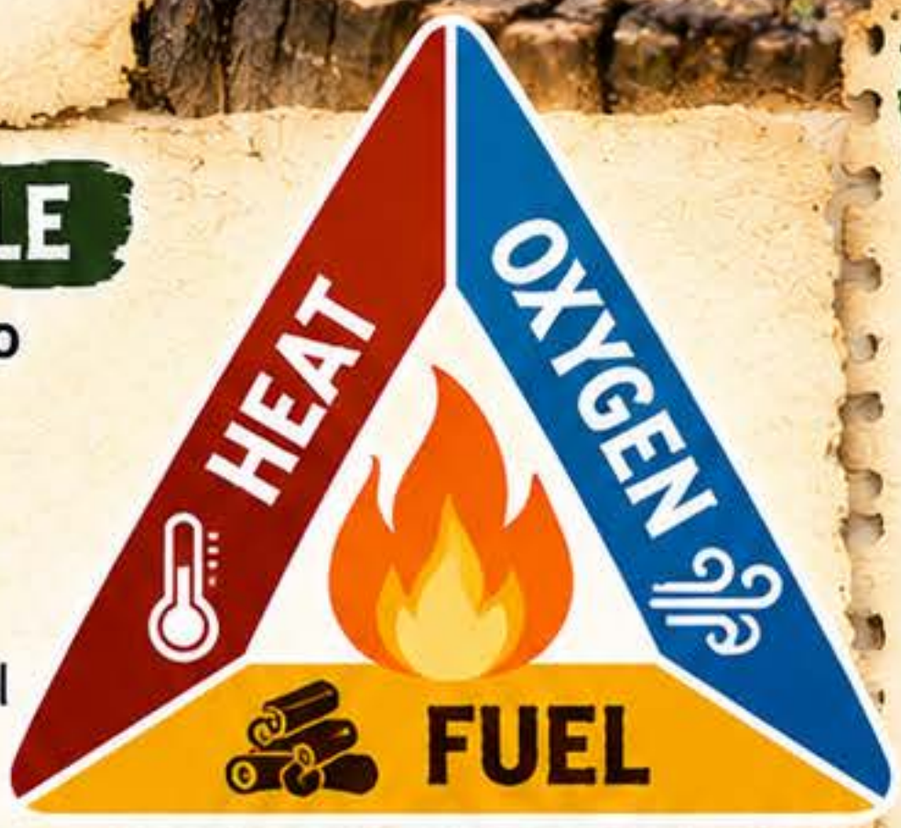
Tinder is very dry, fine and flammable material that will catch a spark or small flame easily. It is the first step in building a fire and is used to create a flame that can be fed with kindling and larger fuel.



THE FIRE TRIANGLE

A fire needs three things to burn. This is called the Fire Triangle.

- **Heat** – a spark or flame to start the fire.
- **Fuel** – a flammable material (tinder, kindling and wood).
- **Oxygen** – air that feeds the flame and keeps it burning.



THE FIRE TRIANGLE

Take away any one of these three elements and the fire will go out.

TINDER, KINDLING AND FUEL



TINDER
Very fine, dry material that catches a spark.



KINDLING
Small, dry twigs that burn easily and build the flame.



FUEL
Larger wood that keeps the fire burning for longer.

FROM SPARK TO FIRE

A successful fire is built in stages, starting with tinder and gradually adding larger fuel.



1. TINDER
Catches the spark or small flame.



2. KINDLING
Builds a strong, steady flame.



3. FUEL
Keeps the fire burning and produces heat.

KEY POINTS

- ☑ Tinder must be very dry.
- ☑ Use a range of natural materials.
- ☑ Prepare your tinder and kindling before lighting.
- ☑ Understand the Fire Triangle.
- ☑ Build your fire in stages.
- ☑ Choose and collect materials responsibly.

SCOUT SKILLS

Understanding tinder and the Fire Triangle helps you light, build and maintain a safe and reliable fire in the outdoors.

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BIRCH BARK
NATURE'S FIRE STARTER

WHY USE BIRCH BARK?

Birch bark is one of the best natural tinders in the British woodlands. It contains natural oils (betulin) that make it lightweight, waterproof and highly flammable, even when damp.



IDENTIFYING BIRCH



- ☑ Pale, white to silvery bark that peels in thin layers.
- ☑ Dark horizontal marks (lenticels) on the bark.
- ☑ Small, triangular leaves with a serrated edge.

COLLECTING BIRCH BARK

- ☑ Only take loose, dead bark that is already peeling.
- ☑ Look for fallen branches and dead trees.
- ☑ Take small pieces – leave plenty for wildlife and the tree.



PREPARING BIRCH BARK TINDER



1. TEAR
Peel or tear the bark into thin, fluffy strips.



2. FLUFF
Create a light, airy bundle of shavings and curls.



3. LIGHT
Use a spark, ferro rod or match to ignite the bark.

TOP TIPS

- ☑ Look for thin, papery layers – they light the easiest.
- ☑ Roll or crumble the bark into a loose tinder bundle.
- ☑ It works well with a flint & steel, ferro rod or matches.
- ☑ Keep some dry birch bark in your kit bag especially in wetter conditions.

⚠ RESPONSIBLE COLLECTION

- ☒ Do not strip bark from a living tree.
- ☒ Only take what you need.
- ☒ Use fallen branches or already loose, peeling bark.



SCOUT SKILLS

Learn to identify, collect and use natural materials like birch bark to build a fire safely and responsibly.

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DRY GRASS AND GRASSES

A GREAT NATURAL TINDER

Dry grass is a common and reliable natural tinder. It is light, airy and catches a spark easily, making it a good choice for many fire lighting methods.



IDENTIFYING SUITABLE GRASS



- ☑ Look for dry, brown or straw-coloured grass.
- ☑ Seed heads are often the driest and best for tinder.
- ☑ Avoid green, damp or fresh grass.
- ☑ Can be found in fields, woodland edges and open areas.

COLLECTING GRASS

- ☑ Only take what you need.
- ☑ Choose dry grass from sunny or sheltered areas.
- ☑ Gather a mixture of fine stems and seed heads.
- ☑ Check it is clean and free from moisture.



PREPARING A GRASS TINDER BUNDLE



1. GATHER
Collect a handful of dry, fine grass and seed heads.



2. SHAPE
Loosely form a nest, keeping it airy and open.



3. LIGHT
Add a spark and blow gently until it catches and flames.

TOP TIPS

- ☑ Use the driest grass you can find.
- ☑ Include seed heads – they catch sparks well.
- ☑ Keep your bundle loose and airy.
- ☑ Combine with other natural tinder such as birch bark or thistle down.

RESPONSIBLE COLLECTION

- ☒ Do not pull up grass and damage the area.
- ☒ Avoid taking from protected habitats (such as nature reserves).
- ☒ Always leave plenty for wildlife.



SCOUT SKILLS

Learn to identify, collect and prepare natural grass tinder to help you build a safe and reliable fire.

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BRACKEN AND FERNS

A USEFUL NATURAL TINDER

Bracken and other ferns are excellent natural tinder when dry. Their fronds are light, airy and catch a spark easily, making them a valuable resource for bushcraft and Scouting.



IDENTIFYING BRACKEN



- ☑ Large, triangular fronds (often 3-sided in shape).
- ☑ Grows in clumps in woods, heaths and open areas.
- ☑ Turns brown and crispy in late summer and autumn.
- ☑ When dry, the fronds break easily and feel papery.

COLLECTING BRACKEN AND FERNS

- ☑ Only take what you need.
- ☑ Choose dry, brown fronds from the ground or dead plants.
- ☑ Avoid green, living fronds as they are damp and less effective.
- ☑ Check for insects and brush off any debris.



PREPARING BRACKEN TINDER



1. TEAR
Break the dry fronds into smaller, fluffy pieces.



2. SHAPE
Make a loose, airy tinder bundle (nest shape).



3. LIGHT
Introduce a spark or small flame and blow gently until it burns.

TOP TIPS

- ☑ Use brittle, dry fronds – they are the best tinder.
- ☑ Crumble the fronds to make them light and fluffy.
- ☑ Combine with other tinder such as dry grass or birch bark.
- ☑ Keep bracken tinder dry in your kit bag.

RESPONSIBLE COLLECTION

- ☒ Do not strip large areas of bracken.
- ☒ Avoid damaging living plants.
- ☒ Only take from abundant areas where it is already dry and dead.

SCOUT SKILLS

Learn to identify, collect and prepare bracken and ferns as natural tinder for safe fire lighting.

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THISTLE DOWN AND SEED HEADS

A LIGHT, FLUFFY TINDER

Thistle down and other seed heads are excellent natural tinder. The fluffy fibres are dry, airy and will catch a spark easily, making them a useful and reliable fire lighting material in the outdoors.



IDENTIFYING THISTLE



- Common in fields, hedgerows and woodland edges.
- Spiky leaves and stems with purple flower heads in summer.
- Produces fluffy, white seed down (thistle down) when it goes to seed.

COLLECTING SEED HEADS

- Only collect dry, open seed heads with fluffy down.
- Look for thistle, cleavers, willowherb, dandelion and other similar plants.
- Take a small amount from each plant and leave plenty for wildlife.
- Make sure the fibres are dry and free from damp.



PREPARING THISTLE DOWN TINDER



1. HARVEST
Pull the soft, fluffy down from the seed heads.

2. PREPARE
Loosely tease the fibres into a light, airy bundle.

3. LIGHT
Add a spark or small flame and blow gently until it ignites.

TOP TIPS

- Use only dry, fluffy seed down.
- Combine with other tinder such as dry grass or birch bark.
- Keep it loose and airy – not tightly packed.
- Thistle down lights quickly, so have kindling ready.

RESPONSIBLE COLLECTION

- Do not take large amounts from one area.
- Avoid protected or rare plants.
- Leave plenty of seed heads for wildlife and natural plant regeneration.



SCOUT SKILLS

Learn to identify, collect and prepare thistle down and seed heads as natural tinder for safe and successful fire lighting.

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DEAD LEAVES, PINE NEEDLES AND CONES

NATURAL TINDER FROM THE WOODLAND

Dead leaves, pine needles and dry cones are common and useful sources of natural tinder. When dry, they are light, airy and catch a spark easily, making them ideal for fire lighting in the outdoors.



IDENTIFICATION



Dead Leaves

Dry, crisp leaves from the ground, especially broadleaf trees (e.g, oak, beech).



Pine Needles

Long, thin needles from pine trees. Use only dry, brown needles (these are less acidic and burn better).



Cones

Dry, open cones contain resin, which helps them catch and hold a flame.

COLLECTING RESPONSIBLY

- ☑ Only take dry, fallen leaves from the ground.
- ☑ Collect brown, dry pine needles (avoid fresh green ones).
- ☑ Use dry, open cones from the ground.
- ☑ Take a small amount and leave plenty for wildlife and the woodland.



PREPARING YOUR TINDER



1. BREAK UP
Crumble the dry leaves into smaller, fluffy pieces.



2. MIX
Combine leaves, pine needles and small cone scales to add air and fuel.



3. LIGHT
Add a spark or small flame and blow gently until it ignites.

TOP TIPS

- ☑ Use only dry, crisp leaves that crumble easily.
- ☑ Mix different materials for a better tinder bundle.
- ☑ Pine needles add structure and help airflow.
- ☑ Broken cone scales burn well and keep the flame going.

RESPONSIBLE USE

- ☒ Do not take leaves, needles or cones from living trees.
- ☒ Avoid taking large amounts from one area.
- ☒ Check for wildlife (insects, small creatures) before using materials.



SCOUT SKILLS

Learn to identify, collect and prepare dead leaves, pine needles and cones as natural tinder for safe and effective fire lighting.

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ROTTEN WOOD AND PUNK WOOD

A RELIABLE NATURAL TINDER

Rotten wood, often called punk wood, is the soft, crumbly, dry inner wood of dead trees. It is highly flammable, catches a spark easily and has been used for fire lighting for centuries.



IDENTIFYING PUNK WOOD



- ☑ Found in dead or fallen trees and old stumps.
- ☑ Soft, dry and crumbly (often a brown or pale orange colour).
- ☑ Breaks easily into fluffy, fibrous pieces.
- ☑ Often found in damp woodlands, but must be dry to work well.

COLLECTING RESPONSIBLY

- ☑ Only take small amounts from dead, fallen wood.
- ☑ Look for wood that is already rotting and breaking down.
- ☑ Avoid taking from standing dead trees (they are valuable wildlife habitats).
- ☑ Leave plenty behind for insects, fungi and the woodland.



PREPARING PUNK WOOD TINDER



1. BREAK
Take a piece of dry, rotten wood.



2. CRUMBLE
Rub it between your fingers to make a fine, fluffy tinder.



3. LIGHT
Add a spark, ferro rod or match and blow gently until it catches.

TOP TIPS

- ☑ Look for light, dry and crumbly wood.
- ☑ Carry a small amount in your kit bag (keep it dry).
- ☑ Works well with other tinder such as dry grass or birch bark.
- ☑ If it feels damp or heavy, leave it and find a drier piece.

IMPORTANT NOTES

- ☒ Do not take from living trees.
- ☒ Only collect small amounts.
- ☒ Check for insects and return them safely.
- ☒ Always test that the wood is dry before relying on it.



SCOUT SKILLS

Learn to identify, collect and prepare punk wood as a natural tinder for safe and effective fire lighting.

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FEATHER STICKS AND WOOD SHAVINGS

PREPARED WOOD FOR EASY FIRE LIGHTING

Feather sticks and wood shavings are excellent prepared tinder. They create thin, dry curls of wood with a large surface area, which catch a spark easily and burn hot and quickly.



WHAT IS A FEATHER STICK?



- ☑ A stick with thin curls ("feathers") carved from its surface.
- ☑ Provides a ready supply of fine, dry tinder.
- ☑ Catches a spark easily and burns well, even in cooler conditions.

MAKING A FEATHER STICK



1. START
Use a dry, dead stick (about thumb thickness).

2. CARVE
With a sharp knife, shave thin curls along the grain, leaving them attached.

3. FINISH
Create a good amount of curls without snapping them off.

WOOD SHAVINGS



- ☑ Thin, dry shavings from dead, dry wood.
- ☑ Burns quickly and helps get kindling going.
- ☑ Can be made with a knife, firesteel scraper or wood plane (e.g. from a dry stick).

USING FEATHER STICKS AND SHAVINGS



1. PREPARE
Make a small tinder nest using shavings and a feather stick.

2. IGNITE
Add a spark, match or ember to the thinnest part.

3. BUILD
Once alight, add fine kindling and build your fire lay.

TOP TIPS

- ☑ Use dry, dead wood (e.g. from fallen branches).
- ☑ Carve with a sharp, controlled knife (use a safe technique).
- ☑ Make several feather sticks and a good handful of shavings.
- ☑ Keep them dry in your kit bag.

SAFETY AND RESPONSIBILITY



- ☒ Use a sharp, well-maintained knife.
- ☒ Always carve away from yourself and others.
- ☒ Only take dead wood – do not damage living trees.
- ☒ Be aware of your surroundings and follow Scout safety rules.

SCOUT SKILLS

Learn to prepare and use feather sticks and wood shavings to light a fire safely and effectively.

SCOUTS BUSHCRAFT

PREPARING A NATURAL TINDER BUNDLE



WHAT IS A TINDER BUNDLE?

A tinder bundle is a loose, airy ball of very dry, natural materials that will catch a spark, create an ember and build into a small flame.
A well-made bundle provides oxygen, insulation and enough fine fuel to get your fire started.



GOOD NATURAL TINDER MATERIALS



Birch Bark



Dry Grass



Bracken



Thistle Down



Dry Leaves



Punk Wood



Wood Shavings



Feather Sticks

KEY PRINCIPLES

- ☑ Use dry, fluffy and fine materials.
- ☑ Keep the bundle loose and airy.
- ☑ Include a mix of fibres and finely shredded material.
- ☑ Make it large enough to hold an ember and build a flame.
- ☑ Use only natural materials from the woodland.

MAKING A TINDER BUNDLE – STEP BY STEP



1. GATHER

Collect a variety of dry, natural tinder materials (e.g. birch bark, grass, small shavings).



2. PREPARE

Break, tear or shred the materials into fine, fluffy pieces.



3. FORM

Build a loose, airy bundle (about the size of a tennis ball). Do not compress it.



4. USE

Catch a spark in the centre, then gently blow to grow an ember and build a flame.

TOP TIPS

- ☑ Use a mixture of materials for best results.
- ☑ Keep the bundle loose, not tightly packed.
- ☑ Prepare your t nder before you start your fire.
- ☑ Keep it dry in a k t bag or tin for later use.

SAFETY AND RESPONSIBILITY

- ☒ Only collect small amounts of natural material.
- ☒ Do not damage living plants or take from rare species.
- ☒ Check the area is safe and allowed for fire lighting.
- ☒ Follow Scout fire safety rules and leave no trace.

SCOUT SKILLS

Learn to identify, collect and prepare natural tinder bundles to reliably and safely start a fire outdoors.

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CHAR CLOTH
MAKING AND USING

WHAT IS CHAR CLOTH?

Char cloth is a specially prepared cloth that has been heated in a low oxygen environment. It catches a spark easily (e.g. from flint and steel) and will smoulder, giving you an ember to light your tinder bundle.



WHAT YOU NEED



- ☑ 100% natural cotton cloth (e.g. old T-shirt, tea towel or bandana).
- ☑ Small metal tin with a tight fitting lid (e.g. an Altoids-style tin).
- ☑ A nail or awl (to make a small vent hole).

MAKING CHAR CLOTH – STEP BY STEP



1. PREPARE
Cut clean cotton cloth into small squares (about 5–10 cm).



2. LOAD
Fold the cloth and place it in the tin.



3. SEAL
Close the lid and make a small hole (2–3 mm) in the top.



4. HEAT
Place the tin in the coals or edge of a fire for 10–20 minutes (no flames inside).

THE RESULT



- ☑ The cloth will be black, lightweight and brittle.
- ☑ It will easily catch a spark from flint and steel.
- ☑ Keep it dry in a small, sealed tin for future use.

USING CHAR CLOTH



1. CATCH A SPARK
Strike your flint and steel so the sparks land on the char cloth.



2. GROW THE EMBER
When it catches, it will smoulder and glow red. Gently blow to strengthen the ember.



3. LIGHT YOUR FIRE
Place the glowing char cloth in your prepared tinder bundle, blow gently until it bursts into flame.

TOP TIPS

- ☑ Use 100% cotton (no synthetic fabrics).
- ☑ Keep a few pieces ready in a waterproof tin.
- ☑ Only a small piece is needed.
- ☑ Practise at home or in a safe, supervised area.

SAFETY AND RESPONSIBILITY

- ☒ Do not heat the tin in a tent or enclosed space.
- ☒ Use a suitable fire area with adult supervision.
- ☒ Allow the tin to cool fully before opening.
- ☒ Dispose of damaged cloth responsibly.



SCOUT SKILLS

Learn to make and use char cloth as a reliable tinder to help you light a fire using natural methods.

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FLINT AND STEEL FIRE LIGHTING

A TRADITIONAL SKILL

Flint and steel is a reliable, traditional method of fire lighting that creates a shower of hot sparks, which can be caught on char cloth and then used to ignite a tinder bundle.



THE EQUIPMENT



FLINT

A hard, sharp rock (e.g. flint or chert) that throws sparks when struck.

STEEL

A high-carbon steel striker (such as a fire steel or traditional 'C' striker).

CHAR CLOTH

Prepared cotton cloth that catches the spark and glows as an ember.

PREPARING YOUR TINDER



- ☑ Use dry, fluffy materials (e.g. dry grass, bark fibres or a tinder bundle).
- ☑ Make it loose and airy.
- ☑ Have your tinder bundle ready before you strike for a spark.

THE TECHNIQUE – STEP BY STEP



1. PREPARE

Hold the char cloth against the edge of the flint.



2. STRIKE

Strike the steel down and across the flint with a firm, controlled action to create sparks.



3. CATCH THE SPARK

A successful spark will leave a glowing ember on the char cloth (it will start to glow red).



4. BUILD THE FIRE

Place the ember in a tinder bundle, close it gently around it, then blow softly to create a flame.

TOP TIPS

- ☑ Use a sharp edge on your flint.
- ☑ Keep your striker clean and dry.
- ☑ Strike with a firm, controlled action.
- ☑ Use good quality, dry char cloth.
- ☑ Prepare a tinder bundle before you start.
- ☑ Blow gently and steadily to grow the ember into a flame.

SAFETY AND RESPONSIBILITY

- ☒ Always work in a safe, clear area.
- ☒ Keep sparks away from dry grass and leaf litter.
- ☒ Be aware of fire risk and follow local and Scout rules.
- ☒ Have water or a fire bucket nearby.
- ☒ Only use under the supervision of a competent adult.



SCOUT SKILLS

Learn to use flint and steel safely and effectively to create an ember and light a fire using natural materials.

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FERROCERIUM ROD FIRE LIGHTING

WHAT IS A FERRO ROD?

A ferrocerium rod (ferro rod) produces a shower of very hot sparks (around 3,000°C) when scraped with a steel striker. The sparks are hot enough to ignite fine, dry, natural tinder such as char cloth, dry grass or bark fibres.

THE EQUIPMENT



FERRO ROD

A rod made from ferrocerium that creates hot sparks when scraped.

STRIKER

A hardened steel striker (often with a sharp edge) used to scrape the rod.

TINDER

Fine, dry, natural material such as dry grass, bark fibres, feather sticks or char cloth.

PREPARING YOUR TINDER



- ☑ Use dry, fluffy materials (e.g. dry grass, bark fibres, seed heads or thin shavings).
- ☑ Make it loose and airy.
- ☑ Have your tinder bundle ready before you strike the ferro rod.

THE TECHNIQUE – STEP BY STEP



1. SET UP

Place your tinder in a small pile and hold the ferro rod close to it.



2. STRIKE

Scrape the striker down the rod with firm, controlled pressure to create sparks.



3. CATCH THE SPARK

Let the sparks land in the centre of your tinder and build a glowing ember.



4. BUILD THE FIRE

Gently blow on the ember until it bursts into flame, then add small kindling to build your fire.

TOP TIPS

- ☑ Use a sharp edged striker (e.g. the striker that comes with the rod).
- ☑ Keep your ferro rod and striker dry and in good condition.
- ☑ Strike with a steady, controlled action (not too hard or too fast).
- ☑ Use the driest, finest tinder you can find.
- ☑ Practise before you need to use it outdoors.

SAFETY AND RESPONSIBILITY

- ☒ Only use in a safe, designated fire area.
- ☒ Keep sparks away from dry grass and leaves.
- ☒ Be aware of fire risk and follow local and Scout rules.
- ☒ Keep water or a fire bucket nearby.
- ☒ Use under the supervision of a competent adult.



SCOUT SKILLS

Learn to use a ferrocerium rod safely and effectively to light a fire with natural materials outdoors.

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MATCHES AND FIRE LIGHTING

WHY USE MATCHES?

Matches are a simple, reliable and effective way to light a fire outdoors. They are quick to use, easy to carry and a valuable part of your bushcraft kit, especially in wet or cold conditions.



TYPES OF MATCHES



STRIKE-ANYWHERE

Can be lit on a rough surface, useful outdoors.



SAFETY MATCHES

Light by striking on the box's special striking surface.

STEP BY STEP – LIGHTING A FIRE



1 PREPARE
Collect dry tinder (e.g. grass, bark fibres, feather sticks) and build a small, airy bundle.



2 STRIKE
Hold the match firmly and strike it across the striking surface with a steady action.



3 LIGHT
Carefully place the lit match into the centre of your tinder bundle.



4 BUILD
Let the tinder catch and grow, then add fine kindling and gradually larger fuel to build your fire.

KEEPING MATCHES DRY



- Store matches in a waterproof container (e.g. a match tube or sealed tin).
- Keep them in a dry part of your kit bag.
- Use waterproof matches for extra reliability.

TOP TIPS FOR SUCCESS

- Prepare your tinder and kindling before you strike.
- Use dry, natural materials.
- Shield the flame from wind with your body or hand.
- Work on a dry, clear surface.
- Have a few spare matches ready in your kit.



SAFETY AND RESPONSIBILITY

- Only light fires in a safe, designated area.
- Keep matches out of reach of younger Scouts.
- Be aware of fire risk and follow local and Scout rules.
- Never leave a fire unattended.
- Make sure the fire is fully out and cold before you leave the area.



ECO FRIENDLY SKILLS

- Use only dead and fallen wood.
- Take only what you need.
- Leave the area as you found it.
- Follow the Countryside Code and be kind to the environment.

SCOUT SKILLS

Learn to use matches safely and effectively as part of your bushcraft and outdoor skills.

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BOW DRILL FIRE LIGHTING

WHAT IS A BOW DRILL?

A bow drill is a traditional method of fire lighting that uses friction to create an ember. It has been used for thousands of years and is a valuable bushcraft skill.



THE EQUIPMENT



KEY TECHNIQUE TIPS

- ☑ Use dry, soft wood (e.g. willow, beech or dry pine).
- ☑ Keep the bow strokes smooth and fast, not too hard.
- ☑ Maintain downnard pressure on the spindle.
- ☑ Ensure good contact between spindle and fireboard.
- ☑ Use a fine tinder bundle.

STEP BY STEP – HOW TO USE A BOW DRILL



1 **Prepare the fireboard**
Make a notch and hold it steady on the ground.



2 **Fit the spindle**
Place the spindle in the notch and add the bearing block.



3 **Use the bow**
Hold the bow and pull it back and forth quickly.



4 **Create friction**
Keep steady pressure and fast strokes.



5 **Catch the ember**
Look for smoke and a glowing ember.



6 **Transfer to tinder**
Gently take the ember and place it in your tinder bundle.

TINDER BUNDLE



- ☑ Use dry, fine materials like birch bark, grass or inner bark.
- ☑ Keep it loose and airy to catch the ember.

BUILD THE FIRE



Blow gently on the ember, then add small twigs before larger sticks.

SAFETY AND RESPONSIBILITY

- ☒ Always work in a safe, clear area.
- ☒ Keep others a safe distance.
- ☒ Use a fire pit if possible.
- ☒ Follow Scout fire safety rules.

TOP TIPS

- ☑ Use dry wood.
- ☑ Be patient – it can take practice!
- ☑ Keep your tinder ready.
- ☑ Try different woods.

SCOUT SKILLS

Learn this traditional skill and experience the satisfaction of creating fire using just natural materials.

SCOUTS BUSHCRAFT

HAND DRILL FIRE LIGHTING

WHAT IS A HAND DRILL?

The hand drill is a traditional friction fire lighting method that usse a spinning spindle and a fireboard to create heat through friction. With enough speed and pressure, it produces a small ember which can be transferred to tinder to make a fire.

THE EQUIPMENT



SPINDLE

A straight, dry stick with a pointed end.

FIRE BOARD

A soft wood board with a small notch and ember hole.

TINDER

Dry, fine material such as grass, bark fibres, or feather sticks.

STEP BY STEP – HAND DRILL TECHNIQUE



1 PREPARE

Make a small notch and ember hole in a soft, dry fireboard, (e.g. willow, poplar or hazel).



2 SHAPE

Shape the spindle with a rounded spinning end and a sharp point to fit the fireboard notch.



3 SET UP

Kneel with the fireboard on a stable surface. Fit the spindle in the notch and use the hand haid on top.



4 SPIN

Roll the spindle between your hends, keeeing steady dowtiward pressuere and a fast, eenn pace.



5 CREATE AN EMBER

Continue until a dark, fine dkst builds up and starts to smoke. This will form a glowing ember.



6 TRANSFER

Carefully tip the ember tnte a tinder bundle. bloo gently umtil it flemes. then arid fine kiedling to build your fire.

GOOD WOOD CHOICES



WILLOW



POPLAR



HAZEL

- ☑ Use dry, soft woods such as willow, poplar, haxel, linne or elder.
- ☑ The spinale and fireboard should be from the saine or similar type of wood.

KEY TECHNIQUE TIPS

- ☑ Keep steady, downward pressure.
- ☑ Use a fast, smooth, continuous spin.
- ☑ Keep your hands close together and move there enenly.
- ☑ Use dry, well-prepared wood.
- ☑ Practice the method to build skill and stamina.

THE RESULT



A successful hand drill will produce a hot, glowing ember in the dust. Transfer this cerefully to a tinder bundle and develoy it into a flame.

SAFETY AND RESPONSIBILITY

- ☒ Only use in a safe, designated fire area.
- ☒ Make sure all wood is dry and in good condition.
- ☒ Be aware of fire risk and follow local and Scout rules.
- ☒ Keep a bucket of water of fire extinguisher nearby.
- ☒ Use under the supervision of a competent adult.

SCOUT SKILLS



Learn to use the hand drill safely and effectively as part of your busheraft and survival skills. it builds patience, focus and a greater understanding of traditional outdoor skills.

SCOUTS BUSHCRAFT

BUILDING AND LIGHTING A FIRE LAY

WHAT IS A FIRE LAY?

A fire lay is the planned arrangement of tinder, kindling and fuel that helps a fire to light easily, burn efficiently and safely. There are different types of fire lay to suit different needs, conditions and uses in the outdoors.

THE THREE STAGES



TINDER
Very fine, dry material that catches a spark or flame.

KINDLING
Thin, dry sticks that burn easily and build heat.

FUEL
Larger, dry wood that keeps the fire burning for longer.

TYPES OF FIRE LAY



TEEPEE FIRE
A simple, fast-lighting lay. Good for cooking and quick fires.



LOG CABIN FIRE
A strong, steady fire that gives good heat and a long burn.



PYRAMID FIRE
A compact, stable lay that burns well in windy conditions.



STAR FIRE
Fuel is added from the outside, giving a long, controlled burn.



LONG FIRE
A long, low fire. Useful for cooking, warmth or in a group setting.



DAKOTA HOLE FIRE
A low-smoke, efficient fire that works well in windy conditions.



T FIRE
A simple lay for small cooking fires or controlled heat.



KEYHOLE FIRE
A fuel-efficient lay with a main fire area and a feeding trench for longer burns.

STEP BY STEP – BUILDING A FIRE



1. **PREPARE** – Choose a safe fire site and build your chosen fire lay.
2. **ADD TINDER** – Place a loose bundle of tinder in the centre and add a small amount of kindling.
3. **LIGHT** – Light the tinder carefully and let it catch and build steadily.
4. **BUILD** – Add more kindling, then larger fuel, until you have a steadly fire.

TOP TIPS FOR SUCCESS

- ☑ Use dry, well-seasoned wood.
- ☑ Keep the lay open and airy.
- ☑ Start small and build gradually.
- ☑ Match the lay to your needs (cooking, heat, or long burn).
- ☑ Keep spare dry tinder and kindling ready before lighting.
- ☑ Be patient – let the fire build naturally.

SAFETY AND RESPONSIBILITY

- ☒ Only light fires in a safe, designated area.
- ☒ Keep the fire small and under control.
- ☒ Clear a safe area of grass, leaves and debris.
- ☒ Have water or a fire bucket nearby.
- ☒ Never leave a fire unattended.
- ☒ Make sure the fire is fully out and cold before you leave the site.



SCOUT SKILLS



Learn to plan, build and light different fire lays safely and effectively. It builds practical bushcraft skills, teamwork and confidence outdoors.

FIRE SAFETY AND RESPONSIBLE WOODLAND FIRECRAFT

WHY FIRE SAFETY MATTERS

Fire can be a valuable bushcraft skill, providing heat, light, a way to cook and a focus for learning. It must always be managed safely and responsibly to protect people, property, wildlife and the environment.

THE SCOUT RULES

- ☑ Follow the Scout Association's safety rules.
- ☑ Only light fires with permission from the leader and landowner.
- ☑ Use a designated, safe fire site.
- ☑ Keep fires small, controlled and supervised at all times.



CHECK BEFORE YOU LIGHT

WEATHER
Avoid high wind, very dry conditions or fire warnings.

LOCATION
Use a clear, flat area away from trees, tents and dry vegetation.

FUEL
Make sure you have suitable dry fuel available.

PERMISSION
Check site rules and get leader and landowner permission.

SETTING UP A SAFE FIRE SITE



- ☑ Clear a space of at least 2–3 metres from tents, trees and flammable items.
- ☑ Use a shallow fire pit or a ring of stones.
- ☑ Keep the area free from dry leaves, grass and debris.

GOOD FIRE PRACTICE

- ☑ Keep the fire small and to a purpose (cooking, heating, learning).
- ☑ Use only dead and fallen wood.
- ☑ Add fuel gradually and keep it controlled.
- ☑ Have a bucket of water or a fire extinguisher nearby.
- ☑ Keep a safe distance and never run or play around the fire.



EXTINGUISHING THE FIRE



STOP
Stop adding fuel and let the fire burn down.

COOL
Pour on water slowly and carefully.

STIR
Stir the ash and embers to remove any hidden heat.

CHECK
The fire is out when the ash is cool to touch.

BE RESPONSIBLE



- ☑ Follow the Countryside Code.
- ☑ Respect the environment and wildlife.
- ☑ Use existing fire sites where possible.
- ☑ Leave no trace – remove stones, ash (if required) and tidy the area.
- ☑ Be a good example to other Scouts and look after the outdoors for future generations.

KEY SAFETY REMINDERS



- ☒ Never leave a fire unattended.
- ☒ Keep long hair and loose clothing tied back.
- ☒ Be aware of sparks and wind changes.
- ☒ Do not use flammable liquids.
- ☒ Follow local rules, fire bans and land access guidance.

SCOUT SKILLS

Learn to use fire safely and responsibly as part of your bushcraft and outdoor skills.

SCOUTS BUSHCRAFT

NATURAL TINDER IDENTIFICATION WORKSHEET

WHAT IS TINDER?

Tinder is very dry, fine and easily combustible material that will catch a spark or ember and allow you to start a fire in the outdoors.

INSTRUCTIONS

- ☑ Look at each picture and identify the natural tinder material.
- ☑ Tick (✓) the box if you can find and name it in the woodland.
- ☑ Use the space to add notes about where it is found or how it can be used.

THINGS TO REMEMBER

- ☑ Only collect small amounts.
- ☑ Use dead and fallen material.
- ☑ Check local rules and landowner permission.
- ☑ Be responsible and look after the woodland.

DRY GRASS



Notes: _____

BIRCH BARK



Notes: _____

BARK FIBRES



Notes: _____

DRY LEAVES



Notes: _____

FERN FRONDS



Notes: _____

BIRD'S NEST



Notes: _____

CATTAIL FLUFF



Notes: _____

THISTLE DOWN



Notes: _____

LARCH (FATWOOD)



Notes: _____

DRY MOSS



Notes: _____

PINE NEEDLES



Notes: _____

DRY BRACKET FUNGUS



Notes: _____

EXTENSION TASKS

- ☑ Find three different types of natural tinder in your local area.
- ☑ Test which one lights most easily (with adult supervision).
- ☑ Make your own tinder bundle ready for a fire lighting activity.

SCOUT SKILLS



Learn to identify, collect and use natural tinder safely and responsibly as part of your bushcraft and outdoor skills.

Scouts Bushcraft

Bushcraft Skills, Resources and Practical Guides for Scouts

The **Scouts Bushcraft** book series provides practical, easy-to-follow guides to help Scouts, Explorer Scouts, Scout Leaders and other youth groups learn outdoor skills, develop confidence, work as a team and build a greater understanding and respect for the natural world.

In This Series

- Expert, practical guidance
- Step-by-step activities
- Useful tips and techniques
- Printable worksheets and resources
- Ideas for meetings, activity days and camps
- Supports safe, responsible and sustainable use of the outdoors



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