



Objective:

The objective of this workshop guide is for the Scout Leader and/or Scout youth to be able to describe and demonstrate safe use of matches.

What's in a match?



A match is a consumable tool for lighting a fire in a controlled manner. A match is typically a wooden stick (usually sold in match boxes) or stiff paper stick (usually sold in matchbooks). One end of the match (match head) is coated with a material containing the element phosphorus which will ignite from the heat generated through friction when the match head is rubbed ("struck") against a suitable surface.



Three types of matches

Safety matches: This type of match is common and is designed to ignite only when struck only against a specially prepared 'striking-surface' which can be found on the side of the match box or a strip on the rear of a matchbook. Safety matches contain "Red Phosphorus" which reacts to the chemicals in the 'striking-surface'

Strike-anywhere matches: This type of match is common and will ignite when struck against any solid surface. Strike-anywhere matches contain a mixture of *phosphorus sesquisulfide* and *potassium chlorate*.

Storm matches: This less common match is a strike anywhere and commonly referred to as the 'lifeboat match' and is commonly found in survival kits. This match has a much larger match and the stick is coated with a combustible compound which helps the match stay alight in strong wind.



Moisture and Matches

There is no such thing as a waterproof match. Matches need heat to ignite and any match contaminated with moisture or struck against a surface that has water on it will typically fail to light. For **Safety matches**, moisture typically softens the 'striking-surface' and/or the match head reducing the heat from the friction of the strike. For **Strike Anywhere** matches moisture is not so critical due to the chemical compound in the match head, however the surface that the match is struck against should not be soaking wet.

Water-Proof Matches



A waterproof match is simply a match which has been protected against moisture. A waterproof match may have been soaked in a flammable material and then coated with a thin coat of wax. Waterproof matches can be purchased or they can be made by coating the matches in a waterproof material such as nail polish, paraffin or a thin coat of wax. A zip lock bag is another ideal method of protecting matches from moisture.



Care of Matches

Matches should be transported in waterproof containers wherever possible contamination from moisture. This is particularly important when matches backpacks for lengthy trips.



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Safety Precautions when using Matches

Matches are typically used for two purposes in scouting. Lighting a stove or lantern or igniting kindling for a fire. Matches require a general set of safety guidelines as well as additional guidelines for Stove/Lantern and fire use.

Match and Fire Permit: Safe Use of Matches



General Safety procedures for using matches

- Matches are a tool to be respected, and dangerous if not used properly.
- Matches are to be used for lighting stoves/lanterns and camp fires only
- Matches must be extinguished or burn out in a safe area (within stove or camp fire area)
- Matches are not to be ignited and thrown
- Matches should be extinguished before the flame burns down to the fingers
- Ensure that your clothing is kept clear of the match in case your clothing is flammable
- Ensure that there is water / baking soda nearby for extinguishing flames
 - Baking soda / sand and shovel / water
- Ensure that a suitable first aid kit is nearby
- Only personnel who are trained in match use should be use matches or supervise the use of matches
- Keep the matchbox / carry case away from the flames, snow and rainy conditions



Safety procedures for using matches with Lanterns and Stoves



Stoves and Lanterns require the use of flammable fuels so ensure a safe area as follows:

- Ensure that personnel who are trained in stove and lantern use
- Ensure that the stove or lantern has been fueled and pressured correctly
- Ensure that the fuel cap on a stove or lantern is tight. An open fuel tank is highly dangerous.
- Ensure that there is no spilt fuel where you will strike the match.
- Ensure that there are no open fuel cans nearby



Safety procedures for using matches with Campfires

Campfires need kindling placed in or near the centre of a campfire, so ensure a safe ignition procedure as follows:

- Inspect the campfire to ensure the following:
 - Clear path to the kindling in the campfire (*you do not have to reach into the campfire*)
 - Campfire is not soaked in flammable fuel or material which will cause a flare up
 - **DO NOT USE MATCHES IN AN EXPLOSIVE ENVIRONMENT**
- Ensure that you have enough time to ignite the fire and retreat before the flames start up
- Use a suitable tool to help ignite a fire and maintain safety precautions
 - Fire brick / fire paste / ignite a thin roll of paper (called paper taper)
- Never reach into a campfire which has gone out and attempt to relight it with a match
 - Use a taper instead



Holding and Igniting a Match

- Hold the match between the thumb and third finger with the index finger on the matchstick below the match head.
- Ensure that the area where you will strike a match is protected against wind as this may extinguish the match before it can ignite the item you wish to burn
- Get close to your work before striking your match as you do not want the match to be extinguished before you get a chance place it near the item you wish to ignite?
- Strike the match tip firmly, smoothly, and quickly
 - Safety matches: Strike along the striker strip with the box closed
 - Strike Anywhere matches: Strike across a dry smooth surface (**TIP: Place a rock in the campfire which you can strike the match**)
 - **Hold match vertically to enable the flame to consume the match body and keep the flame burning**
- Upon ignition, shelter the flame by cupping your hands around the match as you move it to the item you wish to ignite.
- Make sure the match is out before you put it down
 - cold matches can be put in the fire pit or the garbage
 - A hot match can ignite spilt fuel or ignite dry grass





PERMIT DEMONSTRATION

In the presence of your instructor, perform the following:

Questions to be answered

1. State the two types of matches commonly found in scouting
 - a. *Safety matches*
 - b. *Strike anywhere matches*
2. Identify the difference between Safety Matches and Strike Anywhere Matches
 - a. *Strike anywhere matches have red match heads*
3. What stops a match from igniting
 - a. *Moisture*
 - b. *Too much waterproof coating (added nail polish or wax or paraffin)*
 - c. *Not enough friction*
4. What steps can be used to avoid moisture in a match
 - a. *Place matches in waterproof container (Zip lock bag / container)*
 - b. *Waterproof matches with wax/paraffin/nail polish*
5. State the common safety procedures for match use for Stove/ Lantern / Campfire / General Match use
6. What are the key elements to keeping a match ignited
 - a. *No moisture*
 - b. *Protect match from wind*
 - c. *Strike match near where the item is to be ignited*
7. What equipment should always be present when using matches?
 - a. *Suitable first aid kit*
 - b. *Extinguishing material (Water, baking soda, sand etc...)*

Demonstration

1. Demonstrate that you can identify a safe environment when lighting a stove/lantern
2. Demonstrate that you can identify a safe environment when lighting a campfire
3. Demonstrate how to hold a match and ignite it and not burn your hand

TIPS:

Carry the following items:

1. Dryer Lint
 - a. *This will ignite very easily in all kinds of conditions and generates a larger flame*
2. Tea-Light candle
 - a. *The wick can be lit with the match - thus extending the length of time a flame can be lit*
3. Small taper candle
 - a. *Similar to the Tea-Light candle and it allows you to reach into a campfire*
4. Fire Paste or small fire logs
 - a. *Allows you to light a campfire or stove easily*
5. Spare paper which you can twist into a paper taper
 - a. *You can light this and use it as a large match thus extending the burning time for ignition*
6. Carry extended length matches
 - a. *These are thicker and longer and thus increase the ignition potential*