



## Start a Fire with a Magnesium Fire Starter

### LEARNING OBJECTIVE

Provide Rangers with the necessary information and skills to confidently, effectively and safely start a fire outdoors with a Magnesium Fire Starter.

### GENERAL

Knowing how to start a fire without the use of matches or lighters is a very important basic survival skill that every Ranger should learn to master. Most people use matches or lighters to start a fire, but matches can become wet and lighters will soon run out of fluid. Having an alternative fire starting tool will greatly increase your chances of making it through a wilderness survival situation alive. There are many types of survival fire starting tools, and most are small and fit in a pocket just as well as a lighter will. In this block of instruction, you will learn how to use a Magnesium Fire Starter. The object of using this fire starting technique is to focus a spark (from your knife and the striker) onto a pile of magnesium that is shaved off the side of the stick.



### THE THREE TYPES OF FIREWOOD

- **Tinder** (small twigs, dry leaves or grass, dry needles)
- **Kindling** (sticks smaller than 1" around)
- **Fuel logs** (larger pieces of wood that keep the fire burning)

### STEP 1 – LOCATION

Make sure you are in the location where you want your fire. Whether in a remote area or within the confines of a camp where fire pits may already be on-site, you need to ensure that the location of the fire is suitable. Remove all burnable debris, twigs and leaves in a 10-foot diameter circle from the spot where you plan to build your fire. This will help to ensure that the fire cannot spread easily. Make certain you do not build the fire in an area with overhanging branches or old stumps nearby. Build your fire where it will be out of the wind. Set up stones or use trees to block the wind if necessary. Be sure to have water and a shovel

nearby so that you can extinguish the fire quickly if necessary.

## **STEP 2 – TINDER**

Next, you will need some tinder to start your fire. The tinder must be absolutely dry and fluffed very well. The finer and dryer the material used, the better. It should only take a spark to ignite!

There are a number of things you can use for tinder:

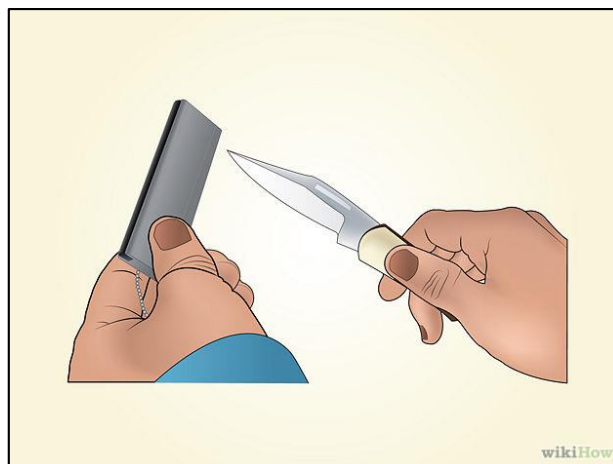
- Fine dry grass (Crush and rub the grasses between your hands until it has a powdery or fluffy texture)
- Dry sticks and bark (Use your knife to turn dry sticks and pieces of bark into powdery tinder)
- Dry leaves
- Wood shavings (Take very fine shavings from a fresh spruce bow any other type of evergreen tree)
- Resin from pine or spruce trees (break the bubbles that ooze from the bark. Put the resin on a twig. This will light like gasoline)
- Cloth fibers
- Dryer lint
- Paper
- Cotton balls covered with Vaseline
- Any other flammable material

Prepare your tinder carefully, it's crucial to the success of the fire making process.

Gather enough tinder to make a medium-size bird nest-shaped bundle. Form the bundle into a bird nest shape.

In the center of the bird nest, place a dry leaf or small piece of cloth or something that will hold a small pile of magnesium shavings.

Use your knife or the blade that comes with the starter stick to shave off enough magnesium to cover a quarter. If the material is really dry and fluffy, you can use the size of a nickel allowing you to save on your fire stick.



### **STEP 3 – KINDLING**

Make a small pile of starter kindling next to where the fire will be made. These twigs should be the size of a pencil or smaller. It is recommended that you use fuzz sticks and stack them using one of the following methods:

- **Tipi** (Preferred - Good for cooking) – Lay the kindling over the tinder like you're building a tent.
- **Cross** (Perfect for a long-lasting campfire) – Crisscross the kindling over the tinder.
- **Lean-to** (Good for cooking) – Drive a long piece of kindling into the ground at an angle over the tinder. Lean smaller pieces of kindling against the longer piece.
- **Log Cabin** (Longest lasting campfire) – Surround your pile of tinder with kindling, stacking pieces at right angles. Top the "cabin" with the smallest kindling.



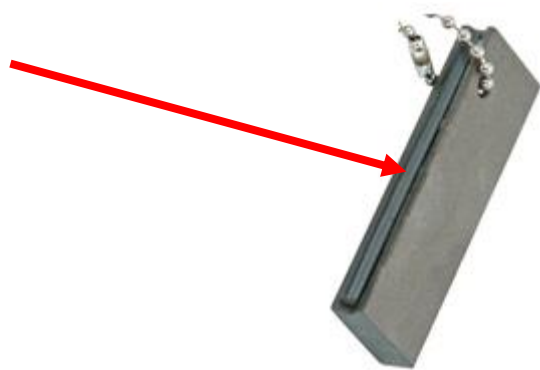
### **STEP 3 – PREPARE THE FIRE**

Next to the kindling pile should be another pile of larger wood, about the size of broom handles or baseball bats. Your next pile will be the other larger stuff you plan to burn. If you have damp wood, set it close to the fire while it's burning so that it can dry out.

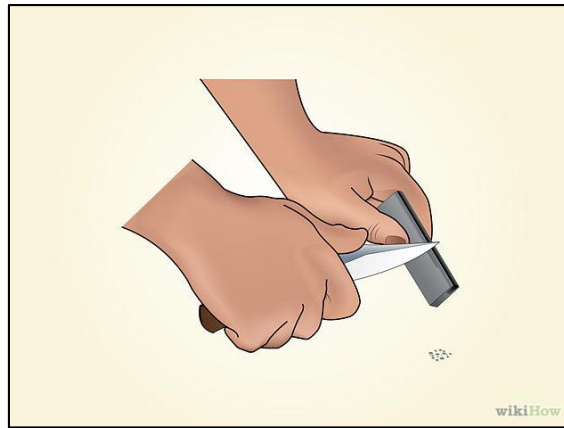
Gently set the bird's nest in the center of your fire pit, making sure not to spill or lose the magnesium shavings.

### **STEP 4 – START THE FIRE**

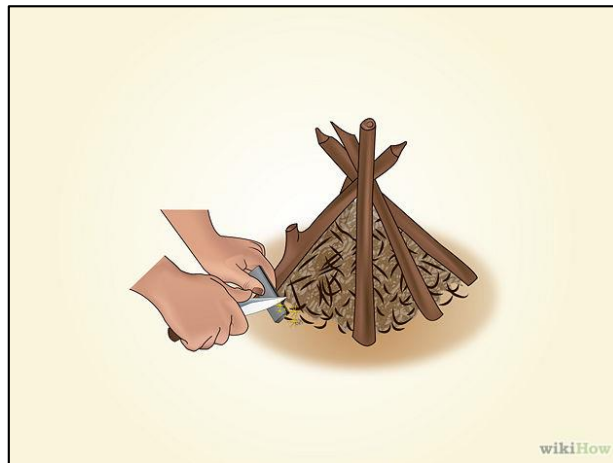
On the side of the magnesium fire stick is a striker that follows the length of the fire stick.



Point the striker into the center of the magnesium pile. Using your knife blade, scrape the striker from top to bottom- this will produce small sparks if you are applying enough pressure and speed. It does not take much pressure to make the sparks, so be careful not to overdo it and don't cut yourself.



After a few tries you can judge your aim causing a spark to hit the magnesium pile. The magnesium will burn fast and hot. Once you get a flame going, cup the bundle and blow gently in the center until the bundle is burning strong. Place the bundle back to the center of the fire pit and slowly add the small starter kindling.



Once the kindling is burning strong, start adding the larger stuff and soon you will have life sustaining fire. Point the largest pieces of wood toward the center of the fire and push them inward as they burn. Remember to add the wood a little a time so that you don't starve the fire of oxygen before it gets started.



### **MAINTAINING YOUR CAMPFIRE**

- Once you have a strong fire going, add larger pieces of dry wood to keep it burning steadily
- Keep your fire to a manageable size
- Never leave your campfire unattended

### **EXTINGUISHING THE FIRE**

- Allow the wood to burn completely to ash, if possible
- Pour lots of water on the fire, drown ALL embers, not just the red ones
- Pour until hissing sound stops
- Stir the campfire ashes and embers with a shovel
- Scrape the sticks and logs to remove any embers
- Stir and make sure everything is wet and they are cold to the touch
- If you do not have water, use dirt. Mix enough dirt or sand with the embers. Continue adding and stirring until all material is cool. Remember: do NOT bury the fire as the fire will continue to smolder and could catch roots on fire that will eventually get to the surface and start a wildfire.
- Remember that the goal is to leave a natural area as if you had never been there.

### **Ranger Fire Safety**

- Keep any additional wood stacked a safe distance from the fire. Even small gusts of wind can cause a fire to spread.
- Never run or play around a fire. You must always remember the potential harm that fire can cause and treat it respectfully.
- Never leave a fire unattended.

**Challenge-Based Test (CBT) for a Fire with Magnesium Fire Starter**

Given a magnesium fire starter and knife, collect the tinder, kindling and fuel logs necessary to start a fire outdoors. Maintain the fire for \_\_\_\_\_ duration of time. Properly extinguish the fire and remove all traces.