

## How to Start a Fire without Matches

Review the basics of starting a fire. A fire must have

- Air
- Fuel
- Heat

3 categories of wood

- Tinder
- Kindling
- Fuel

The “secrets” to a one match fire

- Dry tinder – and enough of it
- Dry kindling and lots of it
- Patience – take your time setting it up and you’ll be rewarded

Notes on fire starters

- Examples of tinder
  - Birch bark
  - Dryer lint
  - Wax paper
  - Wood shavings
  - Hemp rope
  - Steel wool
- Fire starter
  - Commercial fire starter sticks
  - Fire paste
  - Do it yourself
    - Fill the individual sections of a cardboard egg carton with dryer lint
    - Then pour wax over the lint
    - Cut apart – you now have a dozen fire starters

A “no match fire”

- Follows the same principles.
- Just a bit more challenging to turn a spark into a fire.

There are actually many ways to light a fire without matches or some other artificial means (e.g. lighter, flare, etc). We will discuss:

- Magnesium fire starter
- Bow Drill
- Flint and steel

### Magnesium fire starter

- OK, so this is “artificial”, but it’s the best way to start a no match fire, especially when you have a choice.
- Magnesium burns with great intensity (5400 degrees).
- Scrape off some shavings of magnesium and place in a pile.
- Make your tinder into a small “nest” with the pile of shavings in the middle of the nest.
- Generate a spark – strike magnesium against steel toward your pile of shavings; the spark will ignite the shavings and your fire will be started.
- When the tinder ignites, be prepared to move up to kindling quickly.

### Bow Drill

- Starts a fire through friction generated by moving a “drill” back and forth on a “fireboard”.
- Consists of 4 basic parts:
  - Bow – like the bow used in archery, use a piece of wood (sapling that’s light and sturdy, but bends) – should be at least 2.5 – 3 feet long.
    - For the cord use leather, a bootlace, rope – almost anything that maintains a steady pressure and will move the drill without slipping will work.
  - Hand hold (socket) – use hardwood or a rock with a hollowed out place to keep the drill from slipping out.
  - Drill – piece of dry, soft wood that is straight; cut a piece about 6 inches long and  $\frac{3}{4}$ ” in diameter; carve both ends to a dull point.
  - Fireboard – dry soft wood, flat, about  $\frac{1}{2}$  inch thick.
- Must prepare the bow drill the first time by “burning in” a place on the fireboard. Carve a small notch to keep the drill in place; spin back and forth until it starts to smoke.
- To start a fire:
  - First prepare a “nest” of tinder – dry, burnable tinder in the shape of a nest with a small depression.
  - Then set up your fire teepee with tinder and kindling – just like you’re making a one match fire.
  - Operate the bow drill until it starts to smoke; then continue for about another 30 seconds; vary downward pressure to keep up the friction without losing the smooth back and forth action of the bow.
  - This creates a small piece of smoldering charcoal that can be pushed into the “nest”.
  - Carefully blow on the nest to start a flame.
  - When it starts, place it in your fire teepee and carefully add wood to keep the fire going..
- Hints:
  - Lubricate the junction of the drill and the hand hold with wax, soap or grease – after all, you’re trying to light the fireboard, not the hand hold.

- Before using the drill, cut a small “v” shaped notch in the fireboard and place some dust or fine tinder in it. This will help create an ember to transfer to the nest.
- Hold the fireboard with your left foot (if right handed).
- Longer bows tend to require less effort to achieve the same results.
- The wood that the drill and fireboard are made from should be relatively hard (e.g. aspen, cottonwood, sycamore, willow) and should be of the same type of wood. If one is harder than the other, the softer will wear faster and not produce a spark. Resinous softwoods (fir, pine, spruce) do not work well.

#### Flint and steel

- Almost the same as the two above.
- You will need:
  - Flint.
  - Steel – a “C” shaped piece of steel works best as it’s easy to hold.
  - Char cloth – cloth that has been heated in the absence of oxygen (made like charcoal – which – yep, you guessed it, is why they call it char cloth.
- Sparks are generated by striking flint rock against steel.
- The sparks land on the char cloth and start to smolder.
- As soon as the char cloth begins to smolder, transfer it to your tinder nest and proceed as before.