

# Sparkler Whip

Extremely Flammable



Watch video instructions at [ThreeThirtyMinistries.com/SparklerWhip](http://ThreeThirtyMinistries.com/SparklerWhip).

## SUMMARY

You will wet your whip and then wrap it with steel wool, as described below. As the whip moves, air will move through the steel wool creating a multitude of sparks.

The Sparkler Whip is made of Kelvar and has been designed to withstand high temperatures. However, like a fire whip, in time this whip will sustain natural damage. The instructions and tips below are to help keep you safe and your whip in the best condition.

## THE SCIENCE BEHIND THE EFFECT

When you add heat to steel wool (from a flame or 9-volt battery), you send a current of energy through the wire, causing it to heat up. The pad heats up to about **700 degrees C (1292 degrees F)**. These temperatures cause the iron to react with the oxygen (O<sub>2</sub>) in the air and creates iron oxide (FeO<sub>2</sub>). This is the reason that you might see orange discoloration on parts of your whip. Unlike an iron block, steel wool burns because it has lots of thin strands holding atoms that come into contact with oxygen in the air, making it more difficult for the heat to dissipate. Once that reaction gets going, and because it generates heat itself, it heats neighboring atoms causing a chain reaction. Contact with oxygen is crucial to how fast and how hot the iron in steel wool burns. As the whips moves through the air, the sparks are simply the results from high-speed oxidation. The faster your whip moves the hotter it will be and the faster the steel wool will burn.

### **YOU WILL NEED:**

- A lighter or a 9-volt battery to ignite the steel wool. Everything else is included in your package.

### **INSTRUCTIONS & WARNINGS**

- Keep out of reach of children.
- We advise not to use a “fire whip” for this stunt since it might still have fuel remnants on it that might accelerate the burning of the steel wool.
- Do not use this whip on a windy day or in a confined area.
- Do not use this whip with crowds until you have a good feel for how to control the direction of the sparks and the distance they will fly with various types of whip maneuvers.
- ***Use at your own risk. Nathan King, who created this whip, Pineapple Whips and 330ministries is not responsible for any harm that results from the use or misuse of this product.***

*We have conducted multiple experiments with this whip but would like to have feedback on ways to make it better.*

### **PREPARING YOUR WHIP**

**Watch video instructions at [ThreeThirtyMinistries.com/SparklerWhip](https://www.threethirtyministries.com/sparklerwhip).**

- STEP 1 - Wet your whip in water. Just dip it in a bucket to make it damp.
- STEP 2 - Crack your whip several times to throw off any excess water. If your whip is too wet, it will extinguish the steel wool. Using a damp whip will protect your whip and extend its life.
- STEP 3 - Wrap your whip with steel wool. Take one pad and unravel it. You don't want it too “bunched up” because this holds in more heat and is more likely to damage your whip. It will also extend how long the steel wool will burn. We suggest using only one pad the first time you use the whip, just to get a feel for it. Then you can move up to using 3 pads to extend from a few inches below the “fall” of the whip (on top of the kevlar“)

towards the handle, but not too close to the handle. Overlay the steel wool from the three pads so that the energy (fire) can move from one pad to another.

- STEP 4 - Use nylon and kevlar thread to tie the steel wool to your whip. We have found that it is best to use a grid-type pattern, with a wrap about every Inch or so. Begin by tying the steel wool to the whip using nylon thread. Then wrap it up the whip going clockwise to the end of your steel wool. Tie it using several knots. Then use the kevlar thread to wrap it down the whip going counter clockwise, which will create a grid or net-like pattern. As you're wrapping it, make knots occasionally, especially in the areas where different steel wool pads overlap. This is demonstrated well on the video link above.
- STEP 5 - Ignite the steel wool so that it burns from the end of the whip towards the handle. This will extend the time of the burn.
- While you are performing, if you notice that sparks are burning low, speed up your whip to create greater oxidation, throwing off more sparks.



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