



Dear Beakman,
How do fireworks work?
Amanda Considine
Lexington, Minnesota

Beakman or Jax,
P.O. Box 30177
Kansas City, MO 64112
Send your question & address.

Dear Amanda,
Fireworks work because metal burns, and when metals and metal-salts burn, they give off different colors. We usually don't think of something like iron as burning. But it can burn – bright white.

Fireworks use intense heat to burn metals and metal-salts. The heat comes from gunpowder, which is mostly fine granules of charcoal with other chemicals added. Experiments with fire are *not* a good idea because they are extremely dangerous. But there is an experiment your family can do to show you that metals can burn. Do not try this without help from a grown-up! Okay? Okay.

Beakman
Beakman Place

experiment #1 Burning Metals

WHAT YOU NEED: Magnet - permission and help from a grown-up - the glowing, burning coals left over from a cookout - safety goggles

WHAT TO DO: Put on your safety glasses to protect your eyes. Drag the magnet around in the gutters of a paved street. Be very careful. Do not do this if cars are zooming around. Safety is the first reason why you need a grown-up to help. Save the fuzzy black stuff that sticks to the magnet until you have 1/4 to 1/2 teaspoon. Wash your hands well.

MORE STUFF:

When it's dark, ask your grown-up helper to sprinkle the black powder onto the glowing coals. Pay close attention. There will be a very short, bright white sparkle. *Note: The powder you burned is not good to handle. It's another grown-up-type thing.*

WHAT IS GOING ON:

The sparkle comes from burning steel. A sparkler works something like this, only with a fuel that keeps burning the steel for a longer time.

P.S. From Jax: Salt that we eat is only 1 kind of salt. Salts are made when acids react with metals – or things that behave like metals. Sodium chloride, table salt, is made from chlorine and the metal sodium.

July 1
The day Canada celebrates
the nation's birthday.

July 4
The day the U.S.A.
celebrates
the nation's
birthday.



picnics & fireworks

After your family cooks the mystery-meat hot dogs on the grill, the glowing coals can demonstrate metals burning.

