# Lightning Rod Encyclopedia Article

## Lightning Rod

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# Contents

Lightning Rod Encyclopedia Article.....1

Contents.....2

Lightning Rod.....3

# Lightning Rod

The lightning rod was invented by Benjamin Franklin. In 1746 Franklin saw a public demonstration of static electricity in Europe and began to speculate whether or not lightning discharges in the sky could be related to static electricity. He decided to attempt to "collect" the charge by erecting a long metal rod on the top of Christ Church in Philadelphia.

A lightning stroke is the result of a buildup of static electricity in the clouds in the sky. When the charge becomes large enough it arcs out of the sky and strikes the earth. Since electricity tends to take the shortest path, it generally strikes the highest object.

Franklin's lightning rod succeeded admirably; it not only acted as a conduit for collecting the electric current, it deflected potentially damaging lightning safely into the Earth. The "attractive range," the average distance over which a rod will attract lightning, is about 100 feet (30 m) horizontally when mounted 200 feet (60 m) high. The rods became indispensable for protecting buildings from lightning's destructive force.

As part of his experiments with electricity, Franklin discovered he could get a spark to travel over a greater distance if his conductor was sharply pointed, and therefore his lightning rods all had very sharp points. It is amusing to note that following the Revolutionary War, King George III ordered that the lightning rods installed on his palace have *blunt* ends. Although he acknowledged the effectiveness of lightning rods, he refused to accept an American design.