

Crystal Radio Instructions

A crystal radio is actually a simple radio that does not use a battery and does not get plugged in. Instead it uses a germanium diode (the crystal) with a long antenna, a resistor, a coil, a ceramic earphone, and a ground to pull the radio wave out of the air and channel the electricity from the signal itself through the circuit into the earphone and on to ground. The radio is best used outside. Have fun!

CAUTION: Do not use this radio in bad weather. Also, never try to hook any part of this to an electrical outlet even for ground.

This kit should have a block of wood, 5 screws, 2 washers, 1 coil, 1 antenna wire 30 feet long, 1 ground wire about 5 feet long, 1 diode (1n34), 1 resistor (47 K ohm), 1 large paper clip, and 1 ceramic earphone (see the photo).

Coil - The coil should be placed at the top of the board as shown and secured with two screws. Only one wire from an end need be connected to screw A. The other end will not be used and should remain tucked in the coil. The sanded portion will be touched by the paper clip to complete its use in the circuit so face that sanded side towards the other screws. The magnet wire used is enameled green and is sanded to touch the clip and screw.

Antenna Wire - This should not touch the ground but be tied to a fence or a tree in any direction away from the radio. It connects to the one side of the coil and the "A" side of the diode at screw A.

Diode - The diode seems to work from either side but should be connected in the direction shown between points A and B to screws A and B. Bend the ends slightly to wrap around the screws. This part is delicate so treat well.

Resistor - It doesn't matter what direction the resistor is installed. Connect between screws B and C. Bend the ends slightly to wrap around the screws as well.

Ear Phone - Connect in either direction between screws B and C as well. Be gentle and do not break the ends as they are delicate and coated in solder. Bend the ends as well. Do not have insulation under the screw.

Paper Clip - Unfold the paper clip leaving one end with a loop that is pinched in slightly. The paper clip should be between the two washers on screw C to help it swivel. Suggested placement order on screw C: resistor and earphone, bottom washer, paper clip, upper washer, ground wire. Tune by moving the paper clip across the coil.

Ground Wire - The ground wire should be connected at screw C then connected to a water pipe or better yet wrapped around a screw driver as shown or nail and stuck into the ground. Never connect to an outlet ground.

