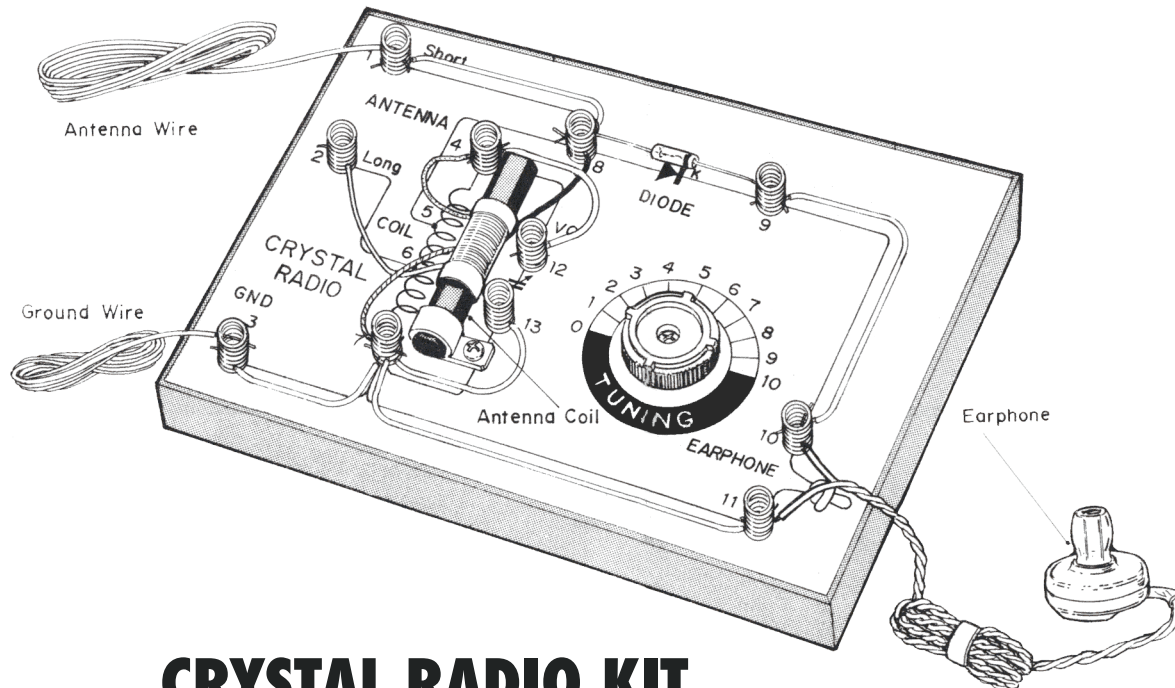


# Science Fair<sup>®</sup>



## CRYSTAL RADIO KIT

Catalogue No. 28-207

With your Crystal Radio Kit you can tune in the AM Radio Band (550-1600 KHz) and you don't use batteries or AC power. It works on the same principle as the early Crystal Radio, however the crystal has

been replaced with a more modern device called a Diode. The function of a Diode is basically the same as the old Crystal but with the advantages of being smaller and easier to use.

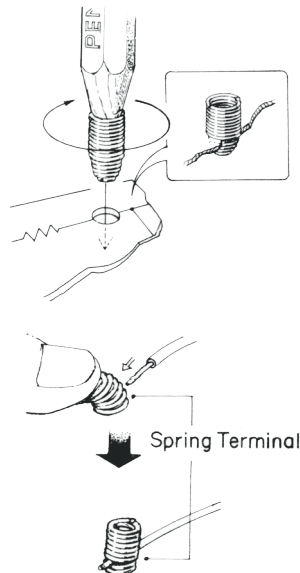
# PARTS LIST

DESCRIPTION	PART NUMBER	DESCRIPTION	PART NUMBER	DESCRIPTION	PART NUMBER
Base Plastic	Z-3152	Red wire, short (50mm)	---	Green insulated wire	W-1587
Coil, Antenna	CA-0619	Red wire, long (70mm)	---	(for Antenna and Ground)	
Tuning Capacitor	C-4242	Black wire, short (60mm)	---	Screw, small & long (2.6 x 4mm)	HD-2042
Knob for Tuning Capacitor	K-0669	Black wire, long (110mm)	---	Screw, small & short (2.6 x 3mm) (2)	HD-2041
Spring Terminals	HB-4804	White wire short (70mm)	---	Screw, medium (3 x 6mm)	HD-2055
Diode	---	White wire, long (90mm)	---	Nut (3mm)	HD-7003
Earphone	E-0007			Antenna Coil Holder	H-1535

## STEP BY STEP INSTRUCTIONS

- Check each step as you complete it.
- Check Parts List to become familiar with each component.

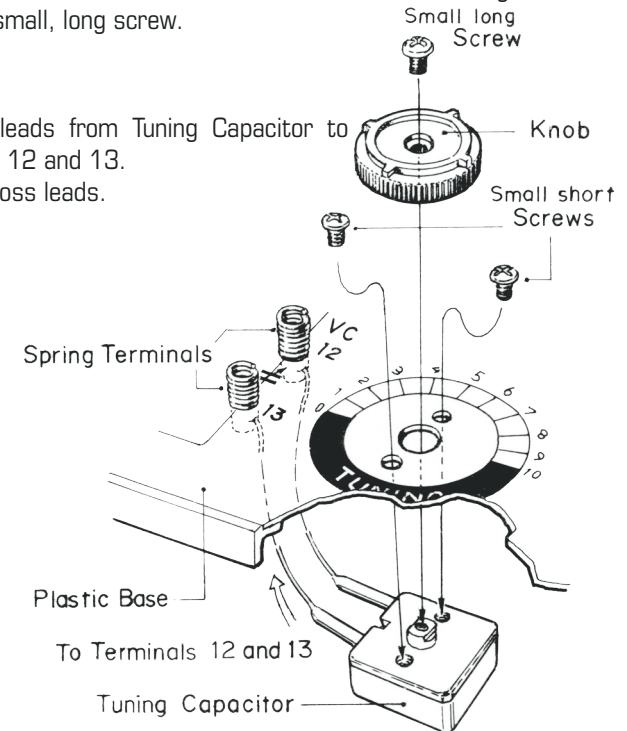
- Install the 11 Spring Terminals on the Plastic Base - one at each large hole. Do this by pressing down firmly with the point of a pencil and twist in place.



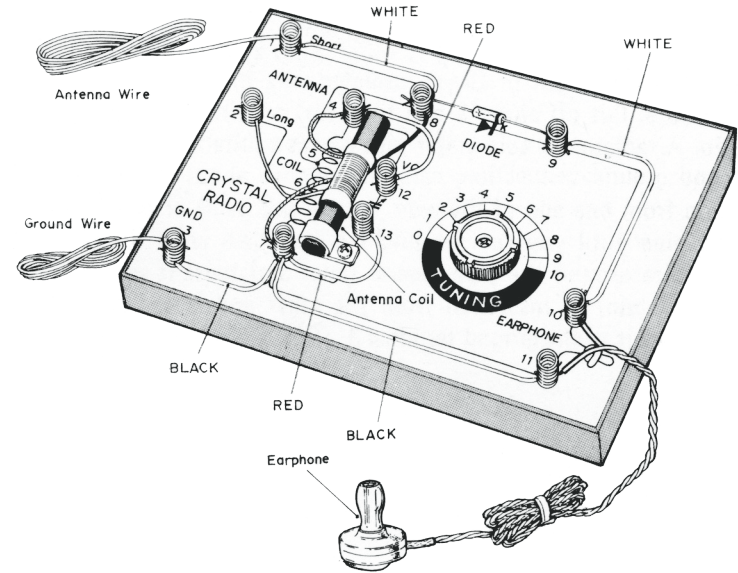
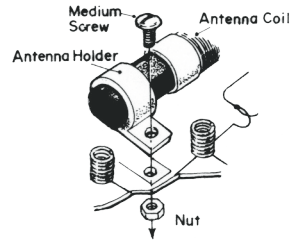
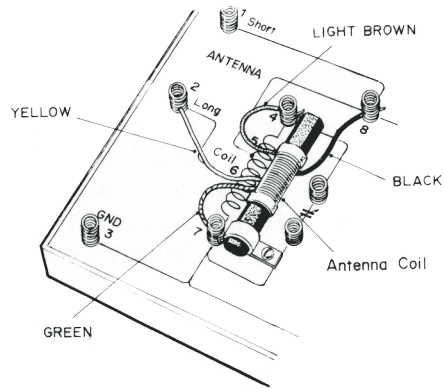
- To connect wires to the Spring Terminals bend the Spring over and insert the bare wire end into the spring and release.

- Mount Tuning Capacitor from the bottom of the Base and secure with the two small, short screws. Mount Tuning Knob with the small, long screw.

- Connect leads from Tuning Capacitor to terminals 12 and 13. Do not cross leads.

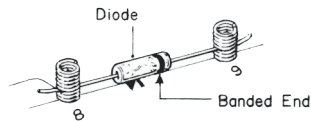


Mount Antenna Coil on top of Base with a medium screw and nut as shown.



Connect wires from the Antenna Coil as follows:

- Green lead to terminal 7
- Yellow lead to terminal 2
- Light Brown lead to terminal 4
- Black lead to terminal 8



Look at the Diode. One end has a band around it - this is the Cathode end. Mount the Diode between terminals 8 and 9, with the Cathode end toward terminal 9.

NOTE: You can connect the Diode in either direction without damaging it. Later on you might like to try the other way (with Cathode to terminal 8) and see if it changes reception.

- Connect the short Red wire between terminals 4 and 12.
- Connect the long Red wire between terminals 13 and 17.
- Connect the short Black wire between terminals 3 and 7.
- Connect the long Black wire between terminals 7 and 11.
- Connect the short White wire between terminals 1 and 8.
- Connect the long White wire between terminals 9 and 10.
- Connect one Earphone wire to terminal 10, the other wire to terminal 11.

Your Crystal Radio is ready to use. All you have to do is connect the Antenna and Ground and listen in the Earphone

## ANTENNA AND GROUND HOOK-UP

This Kit includes a length of Green insulated wire for use as antenna and ground wire. Cut off about 5 feet (150cm) of wire for grounding your Radio. A radiator or cold water pipe makes a suitable ground. To make a good ground connection, carefully remove about 6" (15 cm) of insulation from one end of the wire. Scrape any paint or dirt from the ground pipe until you can see bright metal, then wrap the bare end of the wire around the pipe several times and twist it securely. Remove ¼" (7 mm) of insulation from the other end of the ground wire and connect it to the ground terminal 3, (GND) of your Radio.

The remaining wire is your antenna. Remove ¼" (7 mm) of insulation from one end and connect it to the Short ANTENNA terminal (1). Then extend the Antenna to its full length and position for the best reception.

This Antenna will be suitable if you live in a city, near several radio stations. If you happen to live some distance from the nearest station, a 35 to 75 foot (10 to 25 m) outside antenna may be needed. You should connect this antenna to the Long ANTENNA terminal (2).

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**UK: 29 GLEBELANDS, OXFORD, OX3 7EN**  

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