COMPONENTS

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Important! Read, observe and follow ALL the instructions in the manual.

Printed in China.

Please retain the information in this manual for future reference.

Colour, designs and decorations may vary from those shown in the photographs.

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The purpose of the crossed-out wheelie bin symbol is to remind us that most electrical product and batteries contain trace elements which could be harmful to our environment and therefore our health. We must all be careful to dispose of them responsibly in a specifically designated way – either using a collection scheme or into the correctly labelled civic amenity (NOT into general waste). This will help your local authority to arrange to recycle or dispose of them in the appropriate manner.

Item no. NG 80

WARNING! Not designed and intended for play by children. This is not a toy.

NATIONAL GEOGRAPHIC™

SOLAR-POWERED RADIO

INSTRUCTION MANUAL

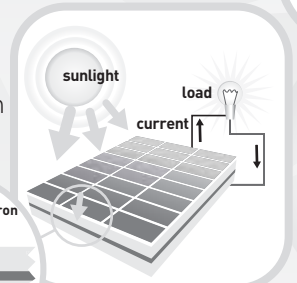
Solar cells – history

The first solar cell was built around 1883 by an American inventor, Charles Fritts. However, it wasn't until the 1950s that silicon solar panels were developed, capable of generating sufficient power to run everyday electrical equipment. These first panels only had an efficiency of 6 percent for the conversion of sunlight into electricity; since then, technological advances have increased this to more than 40 percent.

How do solar cells work?

This radio is powered by a photovoltaic (photo = light, voltaic = electricity) cell, which converts sunlight into electricity. Photovoltaic or PV cells are made from semiconductor materials like silicon. When light strikes the cell, some of its energy is absorbed by the semiconductor.

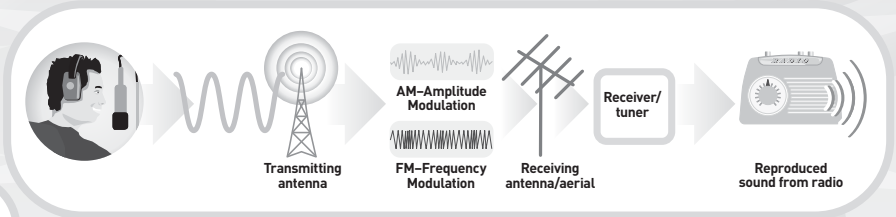
This energy helps electrons to move more freely, allowing them to flow through the semiconductor material in a certain direction. The flow of electrons creates an electric current, which can be used to power a device like a calculator or your National Geographic radio.



Radio – a simple explanation

Radio signals are transmitted in waves, with different radio stations operating on particular frequencies. The waves are created by rapidly changing electric current in a wire, which in turn generates electromagnetic waves.

By amplifying and sending these waves to an antenna, a radio station, for example, can transmit them through the air over long distances. The radio receiver (like your solar radio) has an aerial to capture all of the waves.



The aerial is linked to a tuner contained within the radio electronics, which amplifies one particular frequency. This can be changed using the tuning dial on your radio to select your favourite radio stations.

Finally, this is converted to an electrical signal and sent to a speaker or headphones for you to hear!

Using your National Geographic Solar Radio

Please refer to the list of components to familiarize yourself with the radio. Wrist strap: Fit the wrist strap by screwing to the connector attached to the radio.

Charging: Place the radio with the solar panel facing the sun. The indicator light on the front of the radio will be lit while the radio charges and will go out when fully charged.

The radio can be charged on cloudy days, but this will take longer to complete. Charging efficiency is greatest when the solar panel directly faces the sun and is not obscured in any way. To maximise the life of the battery, please ensure that the radio is charged at least one hour per month.

Tuning the radio: Plug the earphones into the socket on top of the radio. Select either AM or FM, then turn the volume switch clockwise to switch the radio on. Rotate the tuning dial until the correct station is found. When tuning to AM stations, it may help to move the radio to achieve the best reception.

Battery advice

This radio contains a rechargeable lithium-ion battery. This is not designed to be replaced by the consumer and must only be removed by a qualified service engineer. To do this, remove the four retaining screws and pull off the rear of the case. The battery can be removed by cutting the two wires which connect it to the circuit board.