How to make a filter
A plant pot with a plug of cotton wool in the bottom and a layer of sand a few inches deep makes a satisfactory filter for many purposes. Make some muddy water by stirring earth in a dish of water. Pour the water into the filter and catch it in a clear glass as it drips out. See if you can improve the filter by building it up with alternate layers of sand and powdered charcoal. Such a filter will work very well for clarifying water before it is boiled for drinking purposes.

How to make an experimental filter
Fit a one-hole stopper carrying a short length of glass tube into the small end of a lamp chimney. Put a little cotton wool in the bottom and then a layer of small clean pebbles. Wash some coarse sand well and place a layer above the pebbles. Next wash some fine sand and make a thicker layer in the filter. Grind up some wood charcoal and make into a paste with water. Pour the charcoal paste evenly over the surface of the sand. Pour some very muddy water in the top of the filter. Collect the filtrate in a clean glass placed below the filter.