

Other aspects of water

Springs

Pa I **F** 15 min

Students mark the water table and locate the positions of valley, strata, fault and overflow springs on a cross section of a valley.

Bottled water

Pa P 10 min

Students examine a chart showing the analyses of several types of bottled water and must answer questions on it.

Buxton bottled water

A P 10 min

Students are given an empty bottle of Buxton Water and must use the diagram on it to explain why the water was forced to go so deep down and what allowed it to come up to the surface.

Artesian basin

D

Use a clear piece of polythene tube bent into a U shape to illustrate that if the top level of the water in the aquifer is higher than the top of the well then the water will come out of its own accord.

Alternatively a tube blocked off at one end is filled with water and held at an angle. Another tube with a clip at the top is attached to the first tube so that water can flow into it. When the clip is released water rises in the small tube and overflows because its top is lower than the water level in the first tube.

Contaminated aquifer

E P **F** 40 min

Food colouring is added to sediment in tube with gauze over one end. 50ml of clean water is poured into the tube and a sample of the water coming through the sediment is kept. This is repeated until the outflow has no detectable colouring.

Pollution

D

To show that some pollutants will rise to the top of an aquifer whereas others sink to the bottom. Add oil and saline water dyed with food colouring slowly to a 1 litre beaker of water.

Spreading pollution underground

A P **F** 10 min

Students use grains of potassium permanganate to show how the movement of water causes a pollution plume.

Capillary movement of pollution

D or A 5 min

To show how a soluble pollutant will rise through porous rock and soil put a grain of potassium permanganate on a tray with a sugar cube on top. Add a very small amount of water to the tray and the purple colour will rapidly rise to the top of the sugar cube.

Chemical composition of water

A P 5 min

Students are given bottles of mineral water (empty) from a limestone area and from a sandstone area and must compare the chemical composition from the data on each bottle especially the HCO_3 .

Purifying water

E P E 20 min

Water with food colouring added to it or muddy water is allowed to drain through sand of different grain sizes to determine which grain size is best for purifying the water.

Capillary movement in sediment

E P E 40 minutes

The height to which water rises in tubes containing sediment of different grain sizes is measured.



Capillary movement between sheets of glass

E P E 20 min

Two sheets of glass, touching at one end and 0.5mm apart at the other end are held vertically with the bottom edge in water. The height to which the water rises can be measured and the distance between the panes at any point calculated.

Geyser

D E

A Bunsen burner heats the bottom of a water filled glass tube 1m long which has been drawn to a point at the top end and sealed at the bottom

end. The top end just pokes through a hole in a saucer. A polythene sheet 1m square surrounds the saucer so that the water drains back into the saucer and then into the tube. Once the water in bottom of the tube turns to steam it pushes all the water above it out like a real geyser.