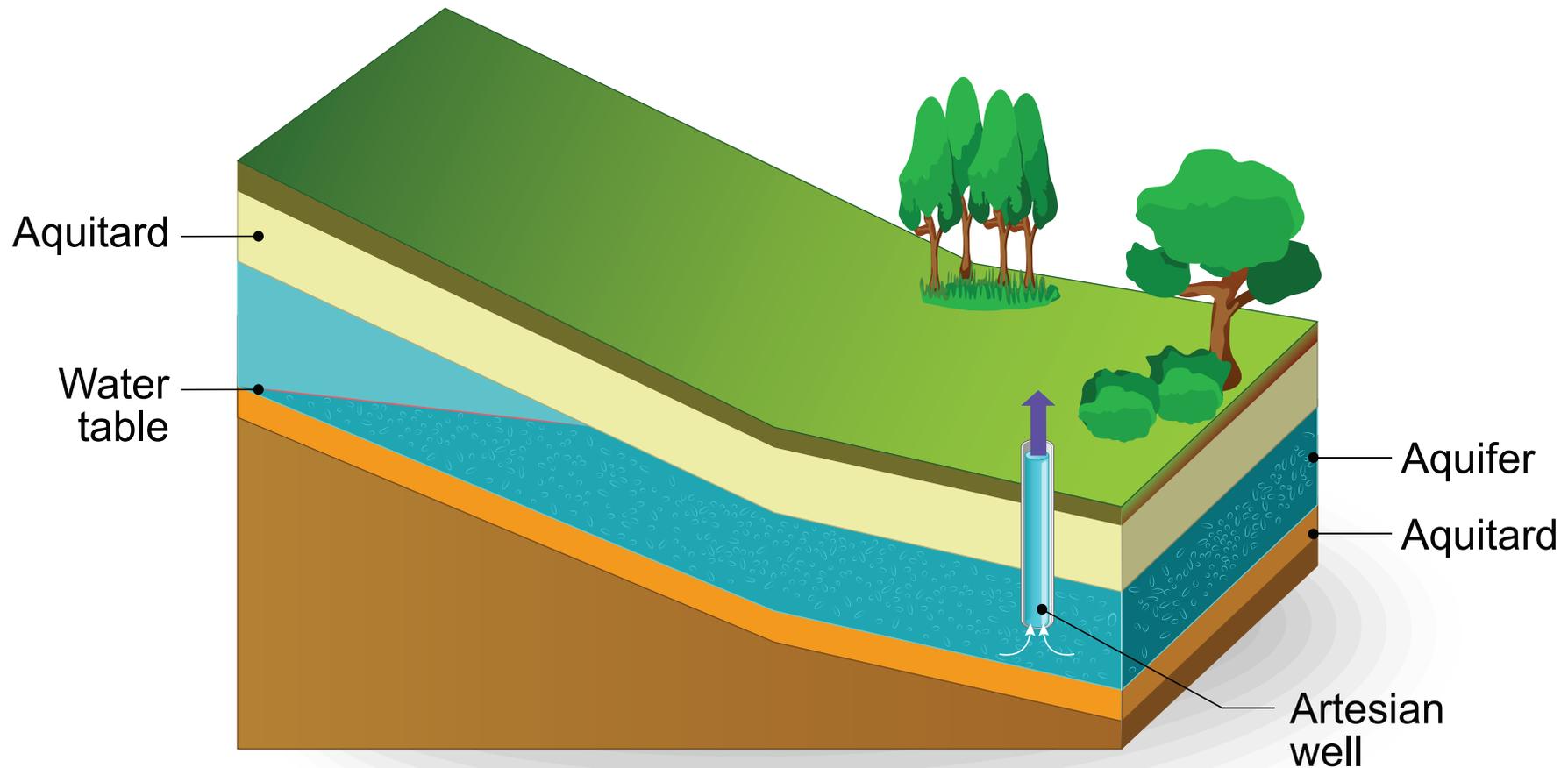


Groundwater



Study*ladder*

Groundwater



Water that sinks into the ground can collect in permeable rock layers under the ground. Groundwater can be accessed by digging or drilling down through the water table into the aquifer where water is stored between layers of rock under the ground. Sometimes groundwater can come to the surface naturally. Sometimes it needs to be pumped to the surface.



Have you ever filled a plastic water bottle and squeezed it? What happens to the water? A natural spring works in a similar way. Spring water can be forced out of the ground when rock layers containing water are under pressure. The water rises and flows freely through a crack in the ground at surface level.

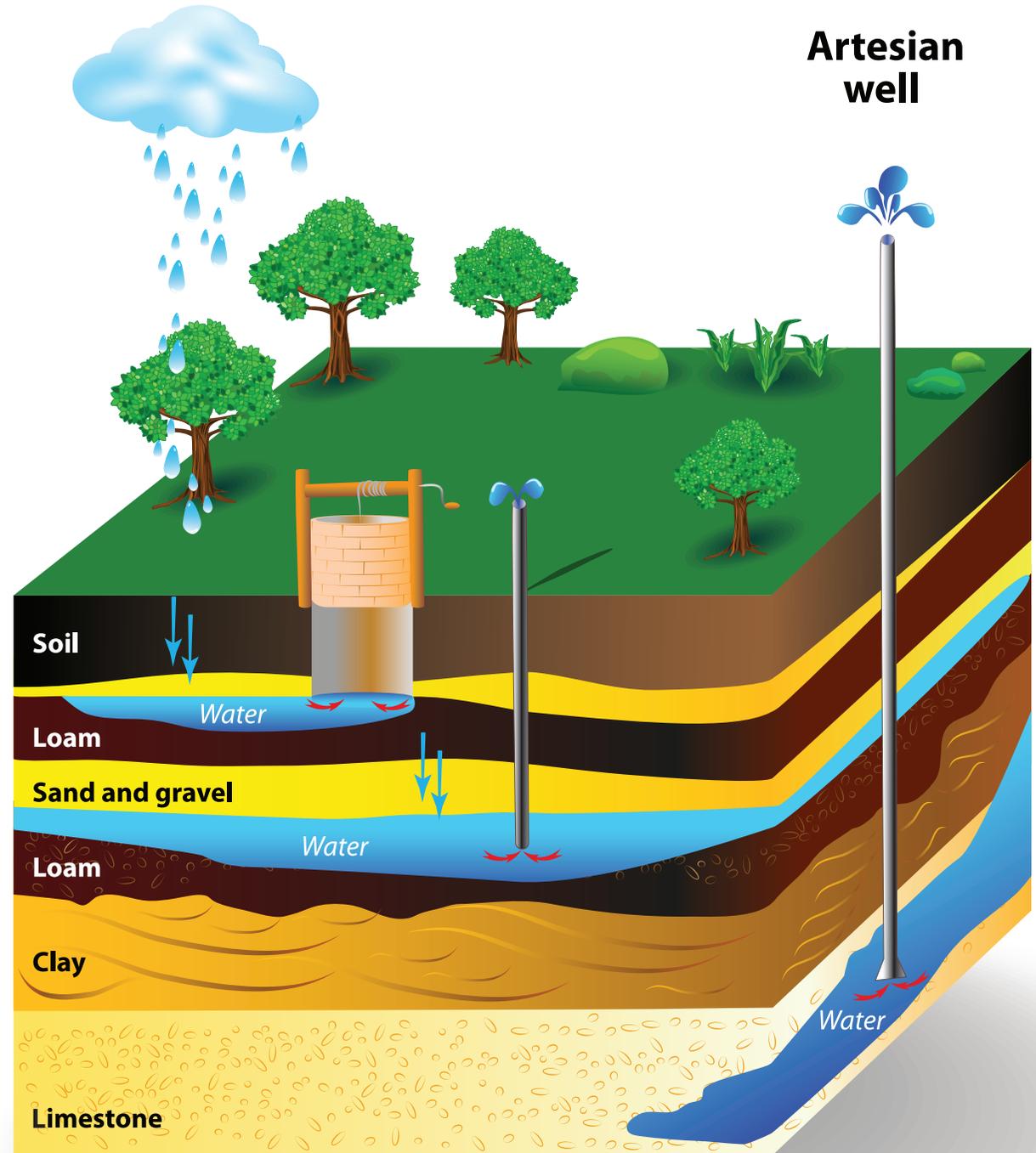


A natural spring can occur when a rock layer containing water is close to the Earth's surface. Water can be forced through an exposed crack in the ground. This natural spring has had a trough built under it for easy access to its water.

How does water collect under the ground?

When it rains some water runs over the surface of the landscape and collects in watercourses such as rivers, lakes and the oceans. Some of the rainfall seeps through the soil and sinks deep into the ground. It percolates through layers of permeable rock and collects under the ground as groundwater.

Permeable layers are composed of rock types that allow water to pass through them. Limestone is an example of a permeable rock type.

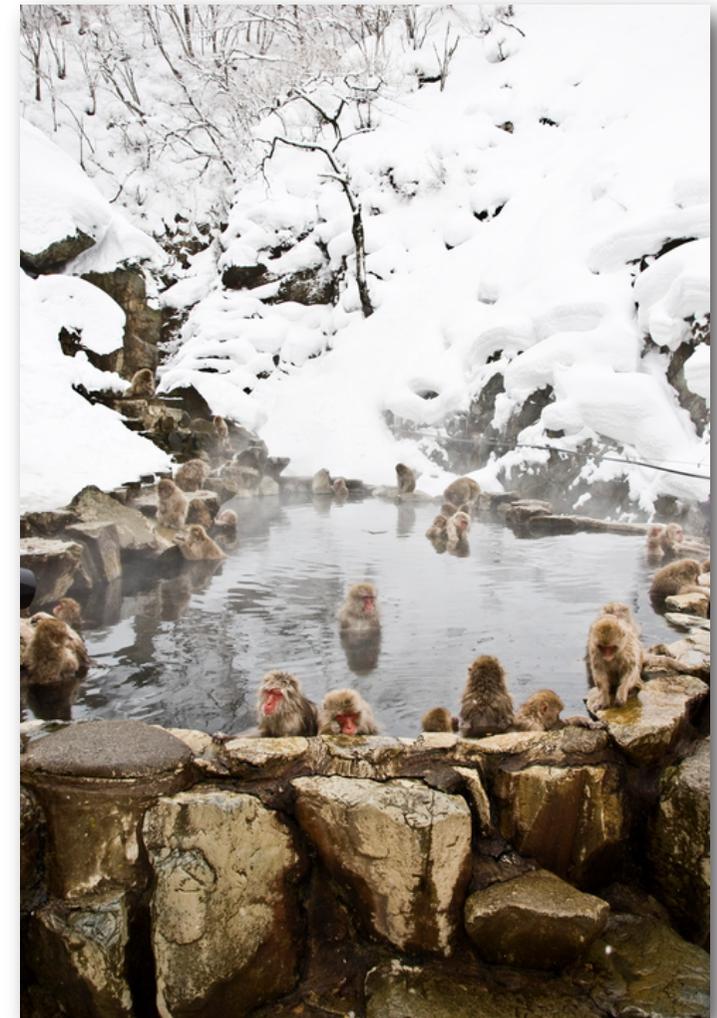
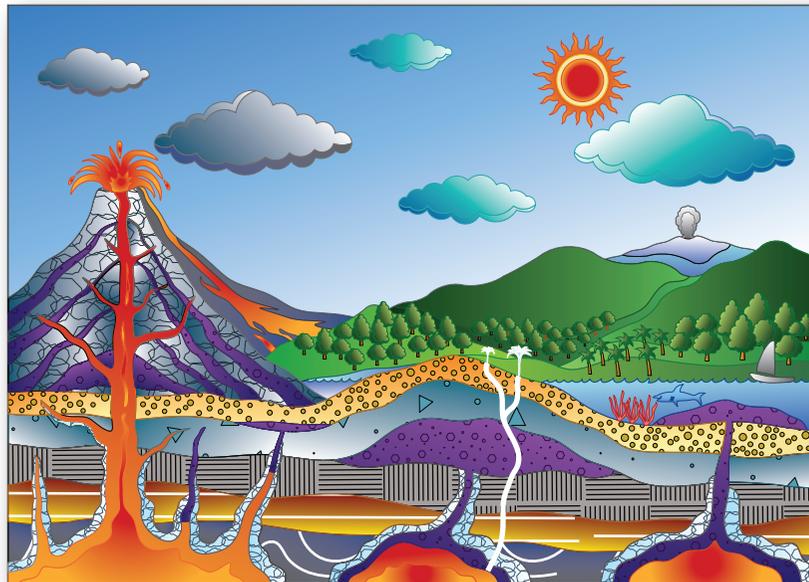


Why are some natural springs hot?

Water that collects in an aquifer under the ground is usually cold. However, if that layer of water lies near to a pocket of magma, the heat of the molten rock under the ground will heat up the water in the aquifer. Therefore the water that springs from the ground will be hot.

Pools can be built to catch the hot water. Hot springs make a lovely relaxing bath for tired muscles, especially on a cold day. People are not the only ones who enjoy a soak in a hot spring! The 'snow monkeys' of Japan enjoy a dip in the hot pools during the snowy winter months.

Japanese Macaque, or snow monkeys, bathing in the natural hot springs (onsen) in Jigokudani, Yamanouchi, Nagana in Japan.



Glossary of Terms

Artesian Water

Water that is forced to the surface when an aquifer is under pressure.

Aquifer

Rock layers that allow water to pass through and collect under the ground.

Aquitard

Rock layers that prevent water flowing from one aquifer to another. Clay is an example of an aquitard.

Geyser

Super hot underground water that spurts out of the ground at high pressure due to geothermal activity.

Groundwater

Water that seeps through the soil and collects in layers of rock under the ground.

Impermeable Rock Layer

A layer of rock is impermeable when it does not allow water to pass through it.

Natural Spring

Water that flows out of the ground is called a natural spring.

Natural Hot Spring

Groundwater heated by pockets of magma under the ground that flows to the surface.

Permeable Rock Layer

A layer of rock is permeable when it allows water to pass through it.

Water Table

The upper limit of saturated rock layers storing water under the ground.

