# Exploring Water Pressure

## What makes artesian springs flow?

Artesian springs and wells are formed when there is pressure in the aquifer, which causes the water to be pushed to the surface.

Spring Lake is fed primarily by artesian springs located along the Balcones Fault Zone, the edge of the Texas Hill Country. The geology of this area is notable for its karst limestone. For innumerable generations, people have come to springs like those in San Marcos, located all along the Balcones escarpment. At these spring sites, water that had flowed into pores and fractures in the limestone miles away up in the hills, having left much of the sediment and detritus it carried along with it down in the aquifer, and coming under immense pressure as it flowed down and reached layers of impermeable rock and clay, literally springs up out of the ground like fountains.

Now we are going to explore how pressure works to cause spring flow. To do this activity you are going to need the following supplies:



**Supplies Needed:**

- Plastic bottle with cap
- Push pin
- Water
- Large bin to collect water
- Blank paper to record information

**Step 1:** Create your hypothesis. What do you think will happen when you put one hole in the plastic bottle? What will happen if you have two holes in the plastic bottle, one near the top and on near the bottom? What will happen you remove the cap?

**Step 2:** Fill the plastic bottle full of water and secure the lid.

**Step 3:** Using the push pin create a hole near the top of the plastic bottle. Remove the push pin and record what happens. Gently squeeze the plastic bottle and record the results. Now remove the cap and record the results.

**Step 4:** Refill the plastic bottle with water and secure the lid.

**Step 5:** Using the push pin create a hole near the bottom of the plastic bottle. Remove the push pin and record what happens. Gently squeeze the plastic bottle and record the results. Now remove the cap and record the results.

**Step 6:** Did what you observed support your hypothesis? Can you imagine the San Marcos Springs working in a similar way?

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