Sand Trap

Quicksand is a thick body of sand grains mixed with water that appears to be a dry hard surface. It may look solid, as if it can be walked on, so it can be unexpectedly dangerous because it really cannot support much weight. People have been known to be swallowed up in quicksand. In this experiment, you'll make a type of quicksand goop that will magically and surprisingly support your hand one minute but not the next.

What to do: On the newspaper, because this experiment can be messy, combine the cornstarch and water in the bowl and stir with the spoon until the mixture looks like paste. The cornstarch mixture will be hard to stir and will stick to the bottom of the bowl. This is to be expected. Next, lightly and evenly sprinkle the ground coffee on top of the mixture to give it a dry and even look. Now the fun begins. Make a fist and lightly pound on the surface. Notice what happens and how it feels. Next, lightly push your fingers down into the mixture.

What happens: When you used your fist to hit the surface of the mixture, it appeared to hit the surface only and seemed to be mysteriously and magically stopped from going any further. But when you placed your fingers or hand in the mixture, they easily and readily slid into the bottom of the bowl.

Why: The molecules of quicksand goop behave much like real quicksand. Unlike water molecules, the goop's molecules are larger. They swell and hook together, and seem to act more like a solid than a liquid. In addition, the coffee grains give the mixture a deceptively smooth and dry look, much like real quicksand.