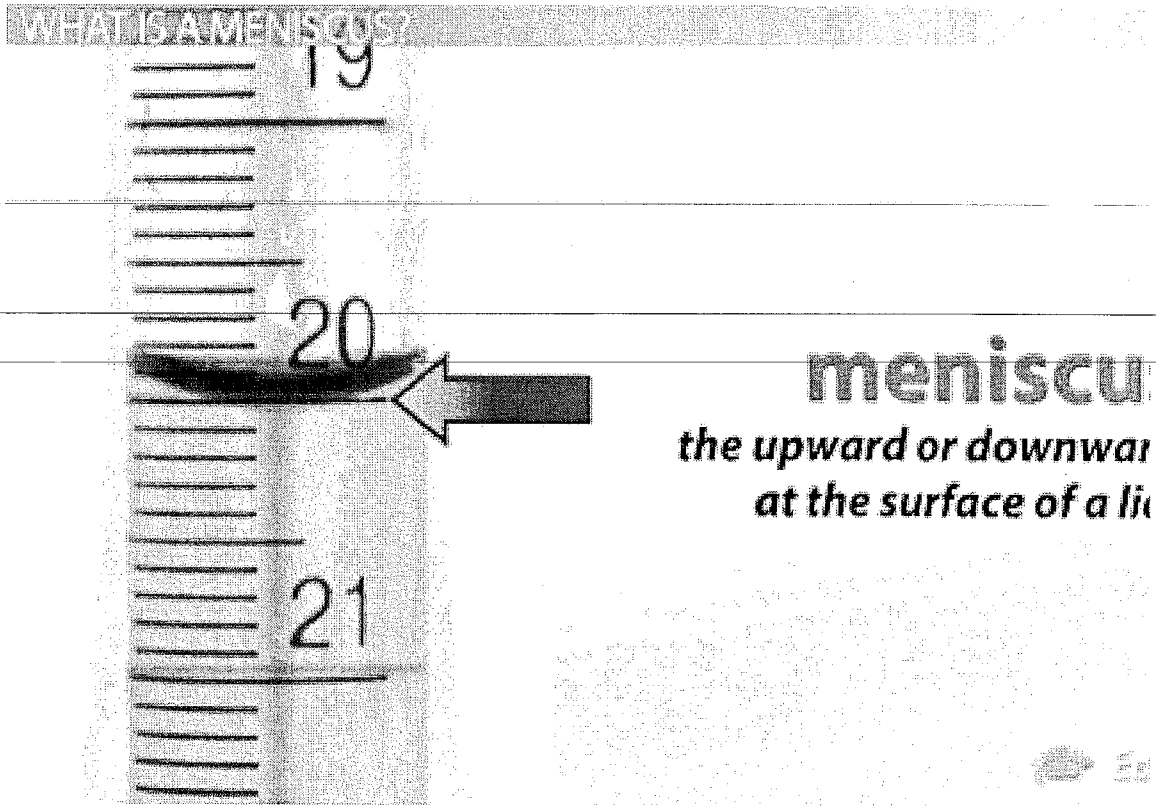
What is a Meniscus?

Name: _____

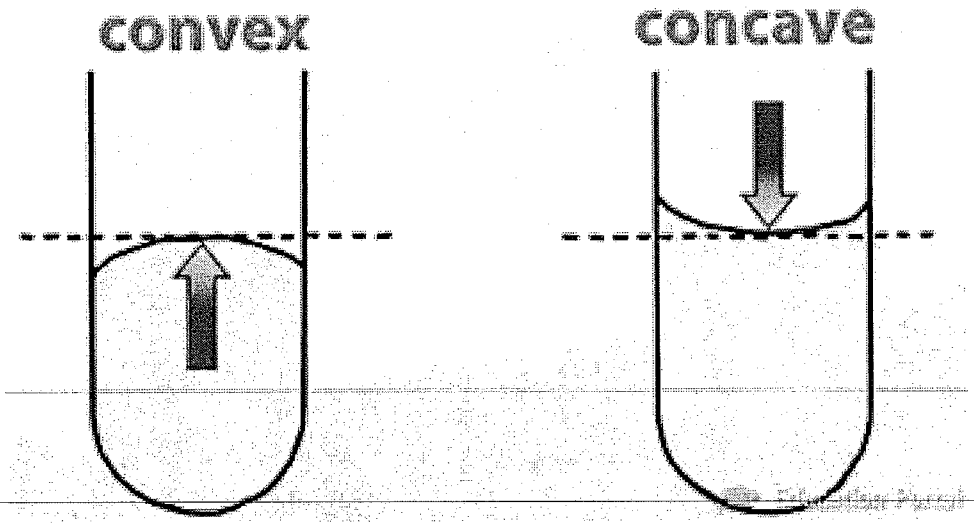
When I was a kid, I baked cookies with my mother. She would always remind me that when measuring the liquid ingredients like milk, oil, and water, I needed to get down and look from the same level as the liquid itself. Looking from above the liquid would produce an inaccurate measurement, which in baking can be quite disastrous.

She didn't know the science behind it, but she was right on with her instructions. What she was unknowingly describing is the **meniscus** of the liquid. This is the upward or downward curve at the surface of a liquid in a container. A meniscus occurs because of surface tension. The word itself comes from the Greek for 'crescent', and you can easily see how it got its name.



Concave Vs. Convex

A meniscus may be either concave or convex. A **concave meniscus** curves downward; if you are looking down from the top, it curves away from you, like the opening of a cave would. In contrast, a **convex meniscus** curves upward; if you are looking down into the container, the meniscus curves toward you.



Most liquids have concave menisci because the molecules of those liquids are more strongly attracted to the walls of their container than to each other. The liquid 'sticks' to the walls instead of lying flat, causing the downward curve.

Some liquids, like mercury, have a convex meniscus because the opposite is true - the molecules of the liquid are more strongly attracted to each other than the walls of the container. So instead of climbing the walls, they pile on top of each other in the middle, pulling away from the sides of the container.

Now measure 2 graduated cylinders with 2 different volumes of water in each.

Volume 1: _____

Volume 2: _____

Show your work to Mr. Bodnar and receive your next instructions!