Pressure in Different Vessels

Compare three shapes at the same depth

Name _____ Period _____ Date _____

Find out whether vessel shape or the amount of liquid changes pressure at the same depth.

About 20 to 25 minutes | buildphysics.com/?experiment=fluid-vessel-shapes

Compare the three vessels

1. Work while paused. In Explore this setup, keep Liquid density at 1000 kg/m³. Set Probe depth to each value below; this moves all three probes together.

2. Select each probe. Read Gauge pressure in Live values and complete the table.

Probe depth (m)	Wide tank pressure (kPa)	Narrow tank pressure (kPa)	Tapered tank pressure (kPa)
0.30			
0.60			
0.90			

3. At the same depth, how do the three pressures compare?

4. Select each tank and read Liquid volume. Does the tank with the most liquid have the greatest pressure at a matched depth? Use one row as evidence.

Change the liquid density

5. Set Probe depth to 0.60 m. Use $P = \rho g h$, where P is gauge pressure, ρ is liquid density, and $g = 9.8$ m/s².

Calculate the pressure for a density of 1500 kg/m³. Convert Pa to kPa by dividing by 1000. Then set Liquid density to 1500 kg/m³ and check any probe.

6. Which changes affected pressure in this activity?