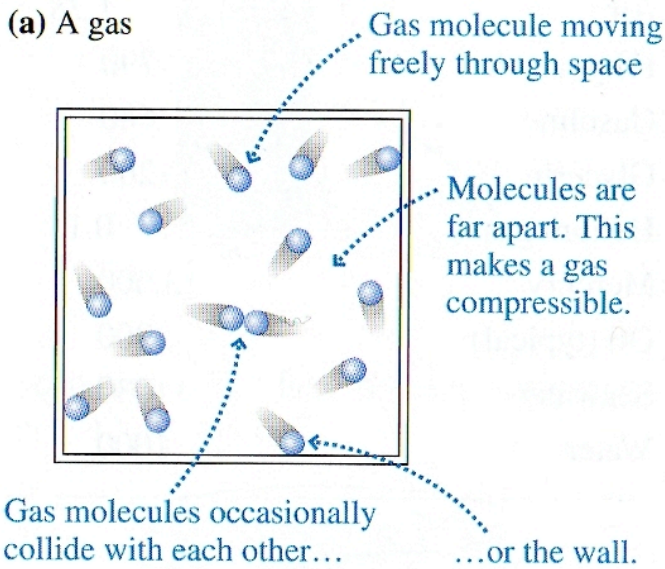
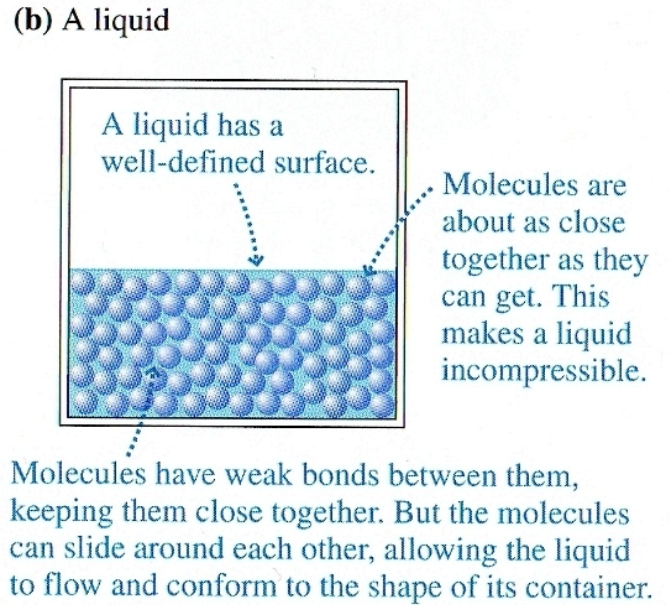


Modèle atomique simple d'un gaz et d'un liquide

Gaz : fluide compressible



Liquide : fluide incompressible



Origine moléculaire de la pression et effet de la gravité sur la pression

FIGURE 15.7 The pressure in a gas is due to the net force of the molecules colliding with the walls.

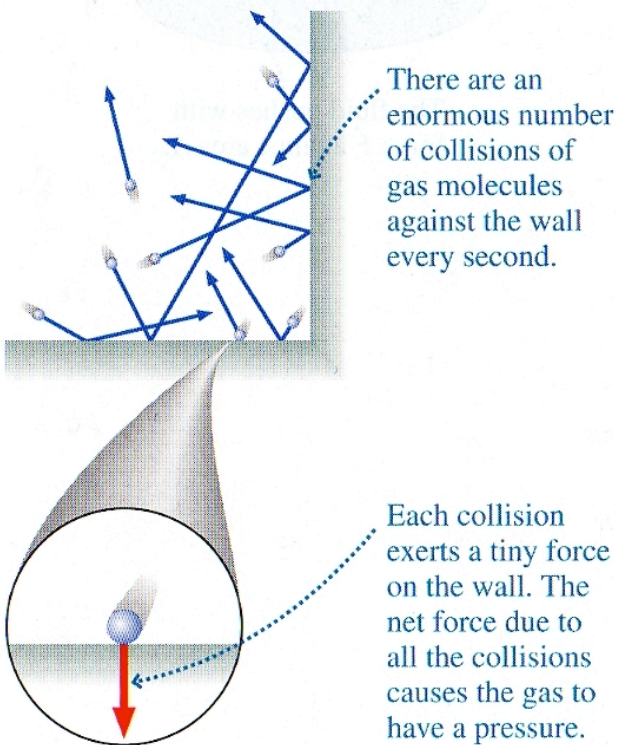


FIGURE 15.8 Gravity affects the pressure of the fluids.

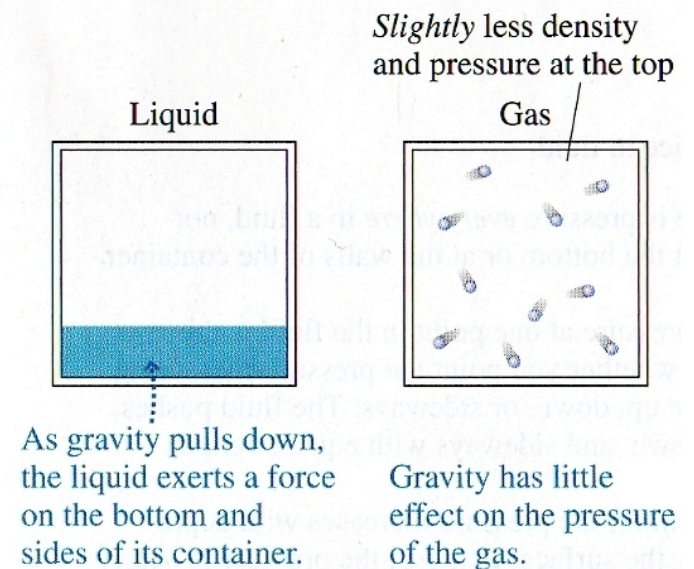
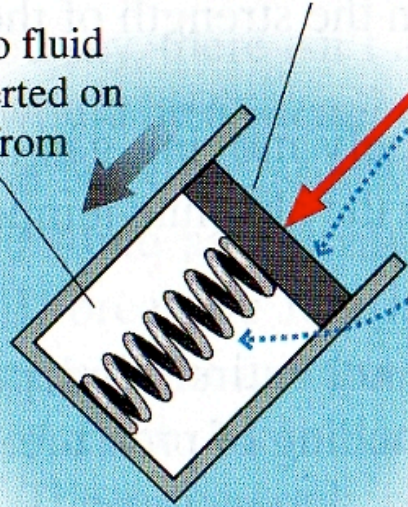


FIGURE 15.5 Learning about pressure.

(a)

Piston attached to spring

Vacuum; no fluid force is exerted on the piston from this side.

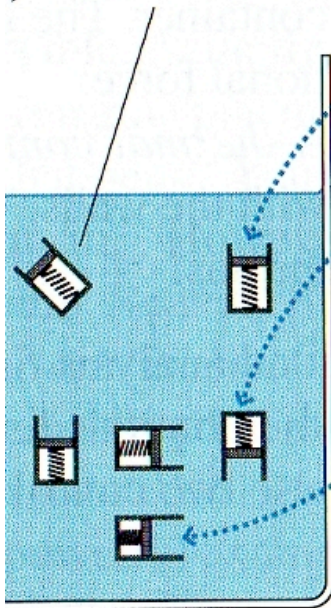


1. The fluid exerts force \vec{F} on a piston with surface area A .

2. The force compresses the spring. Because the spring constant k is known, we can use the spring's compression to find F .

3. Because A is known, we can find the pressure from $p = F/A$.

b) Pressure-measuring device in fluid



1. There is pressure *everywhere* in a fluid, not just at the bottom or at the walls of the container.

2. The pressure at one point in the fluid is the same whether you point the pressure-measuring device up, down, or sideways. The fluid pushes up, down, and sideways with equal strength.

3. In a *liquid*, the pressure increases with depth below the surface. In a *gas*, the pressure is nearly the same at all points (at least in laboratory-size containers).