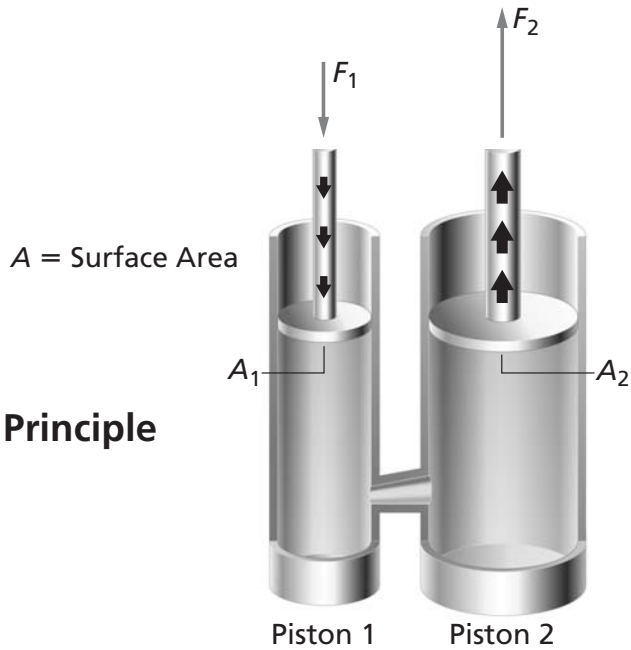
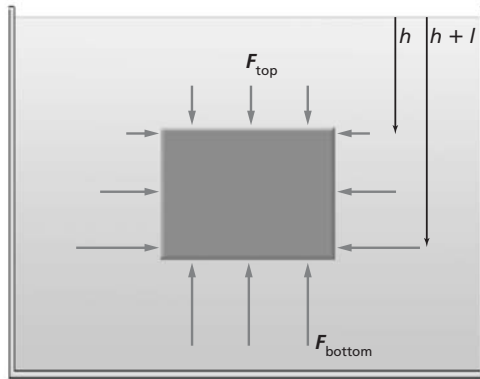


Pascal's, Archimedes', and Bernoulli's Principles

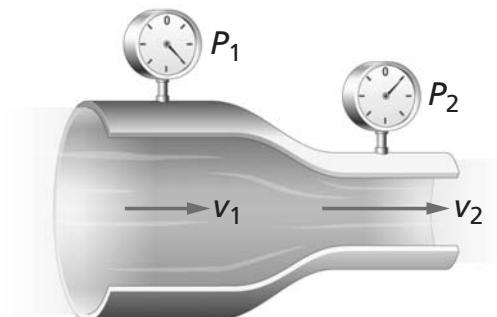
Pascal's Principle



Archimedes' Principle



Bernoulli's Principle



13 Transparency 13-3 Worksheet

Pascal's, Archimedes', and Bernoulli's Principles

1. Describe how the diagram of Pascal's principle is related to the equation for pressure: pressure = force/area.

2. If $A_1 = 10 \text{ cm}$ and $A_2 = 30 \text{ cm}$, how much greater is F_2 than F_1 ?

3. How could you use Pascal's principle to lift a heavy mass with the least effort?

4. In the diagram of Archimedes' principle, analyze the forces acting on the cube due to the liquid. Which of the forces affects the position of the cube?

5. Would increasing the distance, h , increase or decrease the force acting on top of the cube? Why?

6. How would you calculate the volume of liquid the cube displaces?

7. How does the density of the liquid affect the upward force (buoyant force) acting on the cube?

8. In the diagram of Bernoulli's principle, what is the relationship between the velocity of a fluid and the pressure of the fluid?

9. Why does the velocity of a fluid increase as it enters a narrower part of the tube?
