

Teacher's Manual • Unit 4

- become harmful until they are used on a beam balance for the purpose of trade. The balance referred to indicates a beam balance because weights are not used on the spring balance.
7. (b). Such an object would displace only 62.4 pounds of water for every 80 pounds of its own weight.
 8. (a). The lake is 10 feet deep. Only depth is needed to determine pressure.
 9. (c). A siphon will work best where the difference in pressure at the bottom of the two arms of the siphon is very great. This is true where the difference in height is great. Pressure is determined by height only.
 10. (d). The density of water remains almost the same for all depths because water is not compressible. But air becomes much less dense as the height above the ground level is increased.
 11. (c). A hydrometer measures the density of liquids. An aneroid barometer measures the pressure of air.
 12. (b). Item (d) is not true. Even if a pump capable of producing a perfect vacuum were invented, water would still not rise above 34 feet.
 13. (a). An airplane produces lift as a result of a partial vacuum above its wing. A jar of peaches remains sealed as a result of the partial vacuum on the inside.
 14. (b). Both ships and lighter-than-air balloons are supported by buoyant force.
 15. (d). In both the case of the floating axe head and Jesus and Peter walking on the water, the principles studied in this unit were overruled by God.

Suggested Equipment for Unit Four

Starred items are desirable if available.

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stone or other heavy object
several feet of string
yardstick or similar stick

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beam balance*