

1. Hot air rises. (145)
2. A balloon filled with hot air, hydrogen, or helium will rise if it is lighter than an equal volume of air. (145)

## Answer Key to Unit Four

### Study Exercises: Group A (122)

1. attraction
2. The amount of matter in the two objects and the distance between the two objects determine the gravitational attraction between them.
3. becomes less
4. (c)
5. I was not even born yet when God laid the foundations of the earth. I do not understand how they were laid. I do not even know where or upon what the foundations are fastened. I must confess that God alone laid down the first material of this created earth.
6. Gravity has no weight and takes up no space.
7. gravity, inertia
8. (a). Principle 2 on page 121. The moon contains less matter than the earth and Jupiter contains more.  
(b). Principle 3. The centers of gravity of the person and of the earth would be slightly closer together on the North Pole than at the equator.  
(c). Principle 4. By putting a heavy staircase on the one side, the center of gravity of the entire structure would be shifted a little to the side of the actual center of the tower. However, this corrective measure on the leaning tower did not stop its continual leaning. Unless some method is found to stop its leaning, this tower is doomed to fall when finally its center of gravity is above a point that is outside the base.  
(d) Principle 1. The same thing was done in the case of the discovery of the planet Pluto. Not only does the sun attract the planets, but the planets also attract each other. An irregularity in the movement of one planet was correctly assumed to be caused by the attraction of another planet.