Test the air expelled from the lungs for carbon dioxide. Test a solution of carbon dioxide with litmus.

## CHEMICAL TERMS

No attempt should be made to give a formal definition of such things as mixture, chemical compound, etc. Rather point out the characteristics of each. Air is a good example of a mixture; the two constituents retain their own individual properties in air, as has been shown, and the properties of air are largely the sum of the properties of its constituents. There is no evidence of heat or any other change when the two are brought together; these are both characters of a mixture. In a substance such as water, formed by uniting oxygen and hydrogen, we have a good example of a compound; here, when the two are brought together at room temperature, they form merely a mixture, but when the temperature is raised by bringing a flame in contact with the two, there is a violent production of heat, and water is formed, the properties of the latter being quite unlike those of its constituents.

The action of heat on magnesium and limestone shows the basic experimental difference between an element and a compound; the former increases in weight when heated, the latter decreases in weight. The former, to make a new substance, must have something added to it; the latter can give rise to a new substance by a process of separation. Substances like magnesium, which, when they form new substances, never decrease in weight, are elements; but those, like limestone, which can decrease in weight in the formation of a new substance, are compounds, which really means that they break up into two or more substances.