

## 托福阅读能力提升训练：passage7

### Passage 7

A seventeenth-century theory of burning proposed that anything that burns must contain material that the theorists called "phlogiston." Burning was explained as the release of phlogiston from the combustible material to the air. Air was thought essential, since it had to provide a home for the released phlogiston. There would be a limit to the phlogiston transfer, since a given volume of air could absorb only so much phlogiston. When the air had become saturated, no additional amounts of phlogiston could leave the combustible substance, and the burning would stop. Burning would also stop when the combustible substance was emptied of all its phlogiston.

Although the phlogiston theory was self-consistent, it was awkward because it required that imaginative, even mysterious, properties be ascribed to phlogiston. Phlogiston was elusive. No one had ever isolated it and experimentally determined its properties. At times it seemed to show a negative weight: the residue left after burning weighed more than the material before burning. This was true, for example, when magnesium burned. Sometimes phlogiston seemed to show a positive weight, when, for example, wood burned, the ash weighed less than the starting material. And since so little residue was left when alcohol, kerosene, or high-grade coal burned, these obviously different materials were thought to be pure or nearly pure phlogiston.

In the eighteenth century, Antoine Lavoisier, on the basis of careful experimentation, was led to propose a different theory of burning, one that required a constituent of air- later shown to be oxygen- for combustion. Since the weight of the oxygen is always added, the weight of the products of combustion, including the evolved gases, would always be greater than the weight of the starting material.

Lavoisier's interpretation was more reasonable and straightforward than that of the phlogiston theorists. The phlogiston theory, always clumsy, became suspect, eventually fell into scientific disrepute, and was replaced by new ideas.