

Suggestions to Teachers (Lavoisier and the conservation of mass)

Expected results

After the lesson, the students are expected to:

1. Locate the contribution of the Lavoisier's research work concerning the combustion of substances, based on the narration and the suggested information.
2. Locate the evolution of the knowledge into Chemistry concerning the combustion of substances, based on the suggested diagram.
3. Write a story about the evolution of the knowledge into Chemistry concerning the combustion of substances.
4. Explain the combustion of mercury based on: a) the phlogiston's theory and b) the Lavoisier's caloric theory.
5. Experiment with a device, which will be constructed by students, concerning the oxidation of mercury in order to demonstrate the plausibility of the phlogiston's theory or the Lavoisier's theory.
6. Locate the role of the phlogiston in the treatment of ore during the process of the production of minerals, based on the proposed diagrams.
7. Locate the way of phlogiston in which Lavoisier rejected the phlogiston's theory, based on the suggested information.
8. Interpret the conservation of mass of metals concerning their oxidation.
9. Explain the conservation of the phosphorus' mass in his combustion, based on the suggested information.
10. Describe the characteristics of Nature of Science, based on the narration as well as the lesson activities, according to the McComas's list.

About the activities of students

The proposed students' activities are indicative and they aim at the accomplishment of the above expected outcomes. Moreover, the teacher may choose some of them for the teaching process in relation to its aims, the needs of students and the available time. Finally, she/he can create her/his own activities.

About the emergence of the characteristics of science in the narration, these characteristics are quoted in the website, comprehensively (in classification of the stories by NOS).

About the locating of the characteristics of Nature of Science in the proposed activities, indicatively, we can quote the following:

- A) The activity 2 concerns the characteristic of Nature of Science: “Scientific knowledge is tentative but durable”
- B) The activity 3 concerns the characteristic of Nature of Science: “Science demands and relies on empirical evidence”
- C) The activity 4 concern the characteristics of Nature of Science: a) “Science has a subjective element” and b) “Science is a highly creative endeavor”.
- D) The activity 5 concerns the characteristic of Nature of Science: “Science demands and relies on empirical evidence”.
- E) The activity 6 concerns the characteristic of Nature of Science: “Science demands and relies on empirical evidence”
- G) The activity 7 concerns the characteristic of Nature of Science, which are quoted in the previous activities: 2, 3, 4, 5 and 6.

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