

## Suggestions to Teachers (Guericke and vacuum)

### Expected results

After the lesson, the students are expected to:

1. Write a text describing the experiments were performed by Guericke, based on the narration as well as the suggested resources.
2. Experiment with a experimental device, which is a simulation of the Guericke's device of sphere in order to demonstrate the vacuum.
3. Experiment with 'plunger of hydraulician, concerning the properties of the atmospheric air.
4. Experiment, alternatively, about the creation of vacuum in the experiment of hemispheres.
5. Make inquiry in the web and to present the certain points concerning the history of the scientific views about the vacuum, based on a proposed framework data collection.
6. Write the characteristics of the Nature of Science in the proposed lesson activities, according to the McComas' 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 characteristics of Nature of Science: a) "Science demands and relies on empirical evidence" and b) "There are historical, cultural, and social influences on science".

B) The activities 4 and 5 concern the characteristic of Nature of Science: "Science demands and relies on empirical evidence".

C) The activity 6 concerns the characteristic of Nature of Science: "Science is a highly creative endeavor".

D) The activity 7 concerns the characteristic of Nature of Science: "Scientific knowledge is tentative but durable".

- E) The activity 8 concerns the characteristics of Nature of Science, which are quoted in the above activities 2, 4, 5, 6, 7 and the characteristic of the next activity.
- G) The activity 9 concerns the characteristic of Nature of Science: “Scientific knowledge is tentative but durable”.

---

**Suggestions to Teachers (Guericke and vacuum)** were written by Aikaterini Rizaki and Panagiotis Kokkotas with the support by the European Commission (Project 518094-LLP-1-2011-1-GR-COMENIUS-CMP) and the NKUA of Greece. This publication reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained there in.