

## Suggestions to Teachers (Rumford and calorics)

### Expected results

#### **After the lesson, the students are expected to:**

1. Experiment with a device, which is a simulation of the Thompson's cannon for his experimentation.
2. Interpret the observations from their experimentation.
3. Identify Thompson's reflections, when he interpreted the observations of his experiment, based on the narration.
4. Write the characteristics of science and the ways it develops, based on the narration as well as the lesson activities, according to the McComas' list.
5. Write a scientific text about the nature of heat, which is similar to Thompson's announcements of the nature of heat, based on the lesson activities as well as proposed resources.
6. Make inquiry in the web and write a text concerning the scientific views about the nature of heat by the temporal sequence, from the ancient years until today.

### 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 activities 2 and 3 concern the characteristic of Nature of Science: "Science demands and relies on empirical evidence".

B) The activity 4 concerns the characteristic of Nature of Science: "Knowledge production in science includes many common features and shared habits of mind"

C) The activity 5 concerns the characteristics of Nature of Science: a) "Science is a highly creative endeavor" and b) "Scientific knowledge is tentative but durable".

D) The activity 6 concerns the characteristic of Nature of Science: "There are historical, cultural, and social influences on science".

E) The activity 7 concerns the characteristics of Nature of Science, which are quoted in the previous activities: 2, 3, 4, 5 and 6.

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