Melting Blocks and Bill Nye

Topic: Heat and Temperature
Date: 2 April 2010
Subject: Physical Science
Grade level: 8
NSES Standards:

Teaching Standard B: Teachers of science guide and facilitate learning. In doing this, teachers:
- Focus and support inquiries while interacting with students;
- Challenge students to accept and share responsibility for their own learning;
- Encourage and model the skills of scientific inquiry, as well as the curiosity, openness to new ideas and data, and skepticism that characterize science.

Teaching Standard D: Teachers of science design and manage learning environments that provide students with the time, space, and resources needed for learning science. In doing this, teachers:
- Structure the time available so that students are able to engage in extended investigations;
- Create a setting for student work that is flexible and supportive of science inquiry;
- Ensure a safe working environment.

Assessment Standard A: Assessments must be consistent with the decisions they are designed to inform:
- Assessments are deliberately designed;
- Assessments have explicitly stated purposes;

Assessment Standard D: Assessment practices must be fair:
- Assessment tasks must be appropriately modified to accommodate the needs of students with physical disabilities, learning disabilities, or limited English proficiency;
- Assessment tasks must be set in a variety of contexts, be engaging to students with different interests and experiences, and must not assume the perspective or experience of a particular gender, racial, or ethnic group.

Grades 5-8 Content Standard A: As a result of activities in grades 5-8, all students should develop:
- Abilities necessary to do scientific inquiry;
- Understandings about scientific inquiry.

Grades 5-8 Content Standard B: As a result of their activities in grades 5-8, all students should develop an understanding of:
- Transfer of energy.

SOL: The student will investigate and understand temperature scales, heat, and heat transfer. Key concepts include:
d) applications of heat transfer (heat engines, thermostats, refrigeration, and heat pumps).

Topic: Quiz and Conductors/Insulators

Intended Learning Outcomes:
• SW investigate differences in materials by melting ice.

Daily Question: Why does the ice melt one on block and not the other?

Procedures for Learning Experience	Guiding Questions	Materials Needed	**E**valuation (Assessment)	Approximate Time
Engagement/**E**xploration: Students will investigate conductors and insulators by examining two blocks with ice on each. They will have to determine what each block is made from and why the ice melts quickly or slowly.	Why does the ice melt quickly/slowly? What are the blocks made from?	Melting blocks	Student participation	10 minutes
Extension: I will show a Bill Nye video to the students on heat, to further reinforce the concepts we have been discussing over the unit.			Student participation	20 minutes

Notes:

Vocabulary: none

Safety:
• None.

Differentiation:
• None

Technology:
• Bill Nye video from Safari Montage.