

October 28, 2002

8<sup>m</sup> Grade Earth Science

### **Mapping the Weather**

TIMMS-R video study lesson plan

Students are finishing a unit on Meteorology. The following lesson is designed to allow students an opportunity to apply what they have learned by creating a weather map.

Objective: Students, working as a team of meteorologists, will be able to create a national weather map, correctly placing weather station models at the appropriate cities, as well as warm and cold fronts, precipitation, and high and low pressure centers. They will then forecast the weather for the twelve cities for the following day.

Materials include a blank map of the United States, reference maps, blue and red colored pencils, and a data sheet of twelve cities with weather information.

We will review behaviors of warm and cold air, water vapor capacity of each, moving pressure areas, effects of temperature and water vapor on air pressure, and weather station models.

To reinforce the concept of fronts attached to low pressure centers, three balloons, each a different color to represent different temperature air masses, are presented to the students. These are placed appropriately, being guided by students, over an overhead weather map with fronts and pressure centers. The relationship between these fronts is discussed. Students will come to the conclusion that the front moving edge of each balloon represents the warm or cold front, and that the high pressure is located in the middle of the cold air masses. The spaces between each air mass are what cause the low pressure to form. This discussion is intended to draw students to a closer understanding of the relationship between fronts and pressure centers, so that they may more easily create an accurate map.

Students are then presented with the materials and given directions on completing the maps. The teacher checks understanding of students who might typically need extra help, then continues to monitor progress.