

### **Playground Planetarium:**

The purpose was to get students excited about astronomy by engaging in activities created by the International Year of Astronomy (IYA) 2009 organizations; celebrate the 400th anniversary of Galileo's discoveries and introduce students to the amazing discoveries made by the Hubble Telescope Observatory. Through a weekly enrichment pull out program, class period of 45 minutes, students in grades K - 6 were engaged in a variety of activities to expand their knowledge of their night sky.

In grades K - 3, students' interests were captured with a visit inside the school's STARLAB, a mobile planetarium that introduced students to their night sky. Using the STARLAB Constellations cylinder with corresponding curriculum, they learned how to identify different constellations and learned about some of the myths surrounding these constellations with different versions made available for each grade level appropriate to their level of understanding. A copy of the STARLAB Constellations curriculum is attached hereto in addition to its correlation to the National Science Education Standards. Next, students were encouraged to create their own constellations and myths surrounding their constellations. Each student was given a clipboard, blank paper, pencils, pens, markers or colors and asked to draw their own constellation, name the constellation and create a short story to explain the myth surrounding their constellation. To demonstrate what they had learned, students created their own **Playground Planetarium** by covering the school's metal geo dome climber with black poster paper and drew their constellations on the black poster paper, using different colored chalk from inside of the geo dome climber. When everyone finished drawing their constellation, the make shift planetarium was taken down and brought back to class for sharing. To extend the lesson, students made comparisons to Navajo star constellations and their stories.

### **Celebrating Astronomy, Hubble Discoveries and IYA 2009**

Students in 4th grade, studying inventions, along with 5th and 6th grade students, broadened their knowledge about Galileo and the history of telescopes by viewing the PowerPoint entitled "Who Invented the Astronomical Telescope?" provided by IYA 2009 (attached). Student's researched the history of telescopes including space telescopes, including the Hubble Telescope and browsed through the web based activities included in "Telescopes from the Ground Up" provided by Amazing Space (website linked to this entry). To extend the lesson, students viewed amazing online images taken by the Hubble Telescope Observatory. To demonstrate what they learned about the Hubble Telescope images, students analyzed a deep field image and took on the role as cadets of the first class in the Hubble Academy. They engaged in web based lesson plans and activities found at the Hubble Deep Field Academy website courtesy of Amazing Space. A link to the Hubble Deep Field Academy website accompanies this entry. Sixth grade students chose their favorite images taken by the Hubble Telescope Observatory and created a collage of these images in a PowerPoint with the opportunity to submit their collage electronically to the Hubble Classroom Collage Activity contest, also provided by Amazing Space. The winners of that contest posted to the Amazing Space website and the website is linked to this entry. All students culminated their Hubble lessons by

making a hand held paper model of the Hubble Telescope. The template used was found at the Hubble Site, the link is referenced to this entry as well.

A note regarding citation of the correlation to the National Science Education Standards; Resource materials referenced in the abstract and the entry that are linked or downloaded hereto, identify the specific national education standards that apply/correlate to the lessons and activities stated therein. Thus, to reduce redundancy, they will not appear in the body of this text.