



Thursday, October 20, 2016

4th Graders learn about landforms using the NCSU Augmented Reality Sand Table



(Click on the Pic to view a short video)

NCSU Sand Table supports

4th Graders' learning about Landforms

What are the 3 major landforms found in North Carolina? What causes erosion? Why does rain in one location cause flooding in another? These are just a few of questions our eighty 4th graders investigated while playing in the sand - the sand that comes in the Augmented Reality (AR) sand table on loan to Northside Elementary School from The Center for Aquatic Ecology Department of North Carolina State University. The AR sand table is used as an education outreach tool built and supported by a grant awarded from Burrough's Wellcome Fund.

The sand table uses a computer projector and a motion sensing input device (a Kinect 3D Camera) mounted above a box of sand. As a visitor interacts with the sand in the box, the Kinect detects the distance to the sand below, and a visualization of an elevation model with contour lines and a color map assigned by elevation is cast from an overhead projector onto the surface of the sand. As visitors move the sand, the Kinect perceives changes in the distance to the sand surface, and the projected colors and contour lines change accordingly.

Rainfall occurs when an object like a hand is sensed at a particular height above the surface of the sand. The virtual rain appears as a blue, shimmering visualization on the surface below. The water appears to flow down the slopes to the lower surfaces. Real models of have been used to base the depiction of water flow.

The AR sandbox's strongest appeal is the fact that it entices young and old to get involved. While the concepts and scenarios are kept simple for the younger kids, one can still discuss contour lines, mountains, piedmonts, valleys, dams, watersheds and basic water flow. The learning experience can include discussions of landforms, elevation, and best land management practices such as retention ponds and swales. Processes such as erosion, tectonics, and glaciation can even be visualized. These elements are all principles of geomorphology, hydrology, earth science and environmental studies.

Posted by Northside Elementary at 3:19 PM

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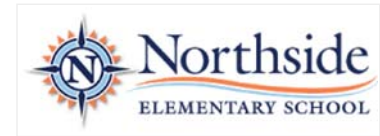
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