Teaching Earth Science with Dioramas at the American Museum of Natural History

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Each day, thousands of visitors to the American Museum of Natural History (AMNH) in New York City learn Science as they stand in front of dioramas depicting ecosystems around the world. Each display, large or small, was meticulously created through collaboration amongst scientists, taxidermists, museum specialists, and artists. The first dioramas were created by Carl Akeley at the Milwaukee Museum in the 1880s. In the early 1900s Frank Chapman, AMNH Curator of Birds, crafted exhibits in the Hall of North American Birds. To spotlight the dangers facing wading birds being hunted for their feathers for ladies' hats. Chapman invited President Theodore Roosevelt to view the Wading Birds Diorama (https://www.amnh.org/exhibitions/permanent-exhibitions/leonard-c.-sanford-hall-of-north-american-birds/wading-birds-diorama). Roosevelt's father was one of the early Trustees and as a boy, Teddy learned much about Nature and taxidermy from Museum staff. One immediate result was establishment of the first National Bird Refuge. Akeley joined the AMNH in the 1920s and organized a collecting trip to create the Hall of African Mammals (https://www.amnh.org/exhibitions/permanent-exhibitions/akeley-hall-of-african-mammals). To re-create authentic background images in days before color photography or computers, Akeley brought artists with his collecting teams. They made "plein air" paintings to capture true colors of the scenery. Back at the Museum, they revived techniques dating back to the Renaissance to paint on curved background surfaces to blend seamlessly with the floors and create a sense of 'being there' that was as revolutionary for its time as 3-D virtual imagery is today. Museum artist James Perry Wilson created an ingenious grid system for translating flat photos and sketches into undistorted landscapes on the curved diorama walls, starting with the lifelike palm tree in the African water hole diorama. The impact on Museum visitors was tremendous because few at the time had opportunities to travel to distant locations or see color images or movies. Similar approaches to sharing world ecosystems were used in the Hall of Asian Mammals (https://www.amnh.org/exhibitions/permanent-exhibitions/hall-of-asian-mammals); Hall of North American Mammals (https://www.amnh.org/exhibitions/permanent-exhibitions/bernard-family-hall-of-north-american-mammals); and nearby Hall of Small Mammals (https://www.amnh.org/exhibitions/permanent-exhibitions/hall-of-small-mammals). Each diorama informs viewers about both the animals on display and also the ecological setting. Through careful selection, a teacher can create effective lessons about landscapes across the globe, from Arctic mountains to the Great Plains to savannahs, deserts, and tropical rain forests. Other lessons can focus on cloud types; famous geological features such as Devil's Tower, Wyoming; and other geoscience features. This presentation will provide examples demonstrating how Museum displays can be used for effective teaching Earth Science to school children and casual visitors, even with many other technologies and travel opportunities available to current learners.