

School Yard Seismology -Demo, see, feel the 'quake' and 'wave' -

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Japan frequently suffers from all types of disasters such as earthquakes, typhoons, floods, volcanic eruptions, and landslides. One of the most essential ways to reduce the damage of natural disasters is to educate the general public to let them understand what is going on during the disasters. This leads individual to make the sound decision on what to do to prevent or reduce the damage. ERI, the Earthquake Research Institute, is qualified by MEXT (the Ministry of Education, Culture, Sports, Science and Technology) to develop education for earthquake disaster prevention in the Tokyo metropolitan area to work with an elementary school as a model to adopt scientific education. A magnitude 7 or greater earthquake beneath this area is recently evaluated to occur with a probability of 70 % in 30 years. To better understand earthquakes in this region, 'Special Project for Earthquake Disaster Mitigation in Tokyo Metropolitan Area' has been conducted mainly by ERI. It is a 4-year project to develop a high-density network with 400 sites at local elementary schools. We start our education project by using the real seismograms observed at their own schoolyards, putting emphasis on the reality and causality of earthquake disaster.

The first step is to lead the kids understand what the seismometers are doing. To show the relationship of 'quake' and 'wave', we first let the kids jump or kick the ground, and show how the waveforms on the monitor change in real time. Then we show them the waveforms recoding a car pass by and a real ground motion caused by an earthquake together with their jump records. Once they get to understand the character of a seismogram, we bring many kinds of seismograms with the time- and amplitude-axes in the same scale. This will lead kids feel the energy of an earthquake. The second step is to have the reality of the earthquake disaster. We show the photos or video pictures of recent events where the earthquake energy they have learned affected. Finally, kids discuss what they can do for the prevention of earthquakes, based on which we edit the standard of elementary school kids' preparation for the earthquakes.