SEISMOGRAPHS IN SCHOOLS: SHAKING THINGS UP IN THE 5TH GRADE

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Our school is part of the IRIS Seismographs in Schools program. In the beginning of the school year I explain to the students how the seismometer works and place a large world map on the wall of the classroom. The students quickly start to plot earthquakes on the wall map. We get our information from the USGS Web site to plot events. As we plot earthquakes the kids see right away that they are not located randomly. In addition I print a seismograph for each earthquake and post them on the wall with the location written on each one. As I post the recordings the students get a good feel for how far away the events are. The students do a good job identifying events as “close”, “across the big puddle”, or “somewhere in between”. Close are those events from Arizona, Nevada, or along the plate boundary from the Sea of Cortez to Parkfield. The kids recognize these seismographs as having a relatively small “P”, a relatively larger “S”, and no clear surface waves. These quakes are frequent and range in magnitude from 3.9 to 5.5. Those events from “across the big puddle” typically have a relatively large “P” no “S” and fairly obvious surface waves. Then there are all the other recordings that don’t fit neatly into either of these two categories. The “somewhere in between” seismographs are usually from South and Central America although we have recorded some from the Caribbean and near the North Pole also.

When there is an earthquake within 600 kilometers of the school, I extract and print out the event and have the students estimate the epicenter using S-P times. I always have a stack of maps in the classroom in case an earthquake occurs. They then draw a circle around Phoenix on a photocopied map and make an educated guess where the event happened. They get graded on their math and accuracy of drawing. We then nervously await information from the Internet to see “who was right”!

Picture of Jerry Cook’s fifth grade classroom. Note all of the seismograms hanging on the wall and a layered Earth model activity next to them.

Jerry Cook’s fifth grade students showing off the seismograph in their classroom.