

UNDERSTANDING EARTHQUAKE NUMBERS

If you live in California, there are a lot of earthquakes. People who have experienced a lot of earthquakes can usually make a good guess on where the earthquake will measure on the Richter scale.

There are two scales to measure earthquake numbers. The Richter Scale measures how strong an earthquake is. The Mercalli Scale measures the level of damage caused by an earthquake.

(You will find charts of both scales in the book)

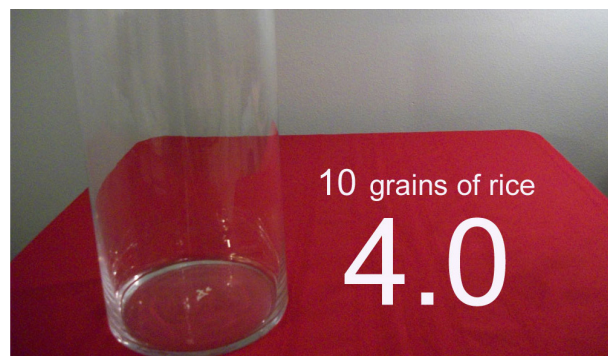
The Richter Scale gives Earthquake numbers from one to ten. Each number has its own set of decimal points. So between each number on the scale, there are nine other numbers that belong in that family.

I am using grains of rice to represent the numbers. Let's start with a 3.0. (Earthquakes below 3.0 are rarely felt by human beings.)

Let the children count out the rice grains. Start at 3.1 **We will call a 3.1 strength earthquake one grain of rice.**

A 3.2 is two grains of rice and so on, up to 3.9 which will be nine grains of rice.

A 4.0 will be 10 Grains of rice.



At 5.0, the measurement is 100 grains of rice. Now we are counting by one hundreds.

(At this point, you can make a little paper cone. Put the 100 grains of rice inside it. Cut around the edges of the cone until it is exactly the size to hold one hundred grains of rice.)

A 5.1 will be 100 grains of rice.

A 5.2 will be 200 grains of rice and so on up until 5.9



A 6.0 will 1,000 grains of rice.

Now we will be counting by 1000's

(I measured this. 1000 grains of rice is approximately 1/3rd of a cup of rice.)

A 7.0 is 10,000 Grains of Rice.
Now we will be counting by 10,000's.

The January 12, 2010 Haiti earthquake was a 7.0



An 8.0 is 100,000 grains of rice.

Now we are counting by 100,000's.

The September 19, 1985 Michoacan, Mexico was an 8.0

**A 9.0 is 1,000,000 grains of rice.
Now we will be counting by 1,000,000,00,'s.**

The March 11, 2011 Honshu, Japan earthquake was a 9.0.



The March 28, 1964 Alaska Earthquake was a 9.2.

That would be 2,000,000 million grains of rice,

The largest earthquake recorded on the Richter scale occurred in Chile on May, 22, 1960.

That was a 9.5

That would be five million grains of rice (approximately 11 and one half of the containers pictured above.)



**You can do this exercise in
the classroom.**

You will need: thirty pounds of rice.

I thought about M&M's, for this tactile exercise, but not only would it give the class a big sugar high, The cost of that many M&M's would be prohibitive.