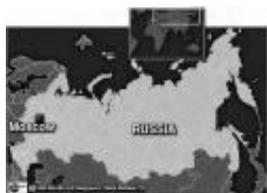# Major Quake Hits Far Eastern Russia

Friday, April 21, 2006

Associated Press

**MOSCOW** — A major earthquake hit a distant, sparsely populated region of Russia's Far East early Friday, causing unknown damage and possible casualties, an emergency official said. The U.S. Geological Survey and Japan's Meteorological Agency estimated the quake's magnitude at 7.7.

The quake hit at 12:30 p.m. local time in the Koryak region, 4,350 miles east of Moscow and some 625 miles north of the largest city in the area Petropavlovsk-Kamchatsky, said Oleg Kotosanov, a duty officer with the regional emergency situations ministry.

Russian news agencies said buildings had been damaged in the coastal village of Tilichiki, including a school, a hospital and an airport. The agencies said there were also some injuries.

Russia's north Pacific coast sits along a major tectonic plate and is frequently hit by earthquakes and volcanic eruptions. "It's the largest event in this area since 1900," A.B. Wade, a spokeswoman for the USGS, told the AP. "It's a *sparsely* populated area; up to 2,000 people were exposed to intensive shaking."

By comparison, the San Francisco earthquake of 1906, which destroyed more than half of the city's buildings and left between 3,000 and 6,000 people dead 100 years ago this week, was estimated at a magnitude of between 7.7 and 7.9.

The Russian quake, centered about 30 miles below the surface, posed no tsunami risk to the western United States and Canada, according to the West Coast and Alaska Tsunami Warning Center.

1 meter = 3.281 feet
1 mile = 1609 meters = 1.609 kilometers
1 mile = 1760 yards = 5280 feet
1 foot = 0.3048 meters
1 yard = 0.9144 meters
1 kilometer = 3281 feet = 0.6241 miles

| Magnitude Change | Energy Change |
|---|---|
| 2.0 | about 1000 times |
| 1.0 | about 32 times |
| 0.5 | about 5.5 times |
| 0.3 | about 3 times |
| 0.1 | about 1.4 times |

*This table shows that a magnitude 7.2 earthquake releases about 32 times more energy than a magnitude 6.2 earthquake, and a magnitude 8.2 earthquake releases about 1000 times more energy than a magnitude 6.2. The amount of energy released and focal depth are key factors in the destructiveness of an earthquake.*

1. Design and solve an algebraic expression that demonstrates the relationship between an earthquake with a magnitude of 7.2 and energy released. (HINT: PROPORTION 2.0/x = 7.2/1000)

2. Given the formula in question one, determine the energy released in San Francisco's 7.9.earthquake of 1906. (magnitude.energy = magnitude/ energy).

3. Assuming the Koryak region is nearly 4,350 miles east of Moscow and half the distance west from village x-ray, what is the distance between Moscow and x-ray? (HINT George and Allison question)

4. Convert your answer in question three into feet, meters, and kilometers. (see conversions above)

5. What is the percent of change in magnitude between the earthquake a century ago in California and yesterday in Russia? (DIFFERENCE/ORIGINAL)

6. In the passage above, in paragraph form, explain at least seven ways using the **"Reading Across The Curriculum"** poster simplifies understanding of the material. Be specific.

7. In paragraph form, list at least five ways using guidelines from the "**Writing Guidelines**" will make you a stronger and more convincing writer; specifically, on The Daughtry Times.

8. Using contextual clues only, explain the meaning of the italicized word: *sparsely.*

9. In paragraph form, explain five legitimate and educational purposes behind The Daughtry Times.