

EARTHQUAKES

Now you are going to read the description of two earthquakes. The first one is published in 1909 and it is about the earthquake that took place in Vélez-Rubio (Almería) in 1751. The second text is about the earthquake that took place in Lorca in 2011. After reading both texts answer the questions.

EARTHQUAKE 1.

HISTORY OF VÉLEZ-RUBIO

Author: Fernando Palanques, 1905.

CHAPTER 23. The earthquake of 1751 and St. Peter's Church.

“Fateful date and sad memory is March 4th 1751, since it records the biggest and destroying earthquakes happening in Vélez-Rubio.

It took place between 2 p.m. and 2.30 p.m. it was so powerful that its effects were felt in all the different buildings of the town, many of them were in such a terrible state that they had to be demolished and built again.

It caused great breaches in the nearby mountains and created drinking water dispensers in different places in the countryside, closing some existing ones. That gigantic geologic shake made the tower of San Peter's Church move so strongly that the bells rang for a while as if something or someone was moving them.

The earthquake lasted, with imperceptible stops, for four to five minutes. But it didn't cause casualties thanks to the time it took place; since, few of the people were at home and the ones who were there ran out to the streets shocked by the shaking of buildings, bells and towers. A lot of families spend the night outdoors or in shelters until they trust again in the possibility of going home again, just to those houses that could be inhabited. However, there were many houses that needed to be repaired to be inhabited again without any kind of risk.

One of the most damaged buildings was Saint Peter's Church which had been rebuilt in 1728. It was necessary to take the religious relics first to San Francisco Convent and then to another Church while St. Peter's Church was demolished since it was about to knock down. (1) A big niche that the Rosario Brotherhood had just built (1746) to the Virgin of the very same name was also destroyed by the earthquake.

(1) The Encarnación's Church was later built on the ground of this Church.

EARTHQUAKE 2.

THE EARTHQUAKE OF LORCA OF 2011.

Author: Toñi Castañeda, 2012.

“Wednesday, May 11th 2011. About 5.30 p.m.”

My husband Santos had gone to pick our son Carlos up from school because on Wednesday he had chess lessons in the afternoon. He had gone with our other son Carlos. I was alone at home, just finishing my coffee in the living-room, sitting down on my favorite armchair, I was just channel-hopping.

I hadn't time to react. There was a strong noise and the armchair, the tv, the windows, the shelves...started to shake. It was so fast and sudden that it is kept in the memory as an indelible image-feeling. Some things started to fall down from the shelves but the truth is that I ran out of the house and didn't stop to look at it. Running down the stairs I met some neighbors that shocked were doing the same as me.

Santos and the children were in the car in their way home. They told me that they were stopped in a zebra-crossing when they felt the car moving and heard windows breaking in the nearby buildings. It was the first earthquake. It caused a strong anxiety and people ran out to the street. We met in the parks and open areas and started to talk about what had just happened. I was in a park with my children who were playing on the grass, very close to me.

During that moment, during those seconds they were not scared (the scary came later). It is incredible, as if it wasn't real. The earth trembles under your feet, the buildings move and the noise of walls being demolished, things in the houses breaking down, the people's screamings. This time I couldn't hear the big thunder. Everything was covered with dust and the rubbles covered the streets and crushed the parked cars. I thought of a bombing. It was the second earthquake. The park where we were is 300 meters away from where my house "was". The way from the park to my house was the most horrifying thing. We were walking through the middle of the streets, trying to avoid the rubbles, flowerplots, ledges, broken windows. We also were trying to avoid being close to the buildings being afraid of more aftershocks. We started to realize the importance of the shake: the supporting walls of the houses were demolished, there were great breaches in all the different buildings.

I didn't go to my house because my children were extremely scared and they just wanted to leave Lorca immediately. But I was able to have a look to the lateral façade of my building; it was pierced by an enormous breach in the middle. My building's main door had disappeared and the lobby was a jumble of plaster, iron and bricks. There wasn't any longer the door of the room where the cleaning objects were kept. We decided not to go into the house. We took the car, that is was fine miraculously, and we drove to the countryside, a few kilometers away from Lorca. My children never went back home.

QUESTIONS

SOLVE.

1. The article published by Fernando Palanques (the first text) is about the earthquake that took place in Vélez-Rubio. Try to guess the intensity degree of it using the Mercalli Intensity Scale.
2. Do the same activity, that is, try to guess the intensity degree of the Earquake that took place in Lorca (text 2).
3. Compare both results and analyse them.

ANALYZE.

4. Which geological causes make the areas of “La Comarca de Los Vélez” and “Lorca” being considered as seismically active áreas?
5. Is it possible that earthquakes of such intensity take place in the future in “La Comarca de Los Vélez”?
6. How are earthquakes caused?
7. What are the first earthquakes and the afterschoks? How are they produced?

RESEARCH.

8. Find information of different earthquakes affecting the area of “La Comarca de los Vélez” and guess the degress of them following the Mercalli Intensity Scale.

Mercalli Intensity Scale

I. Not felt	Not felt except by a very few under especially favorable conditions.
II. Weak	Felt only by a few people at rest, especially on upper floors of buildings.
III. Weak	Felt quite noticeably by people indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV. Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V. Moderate	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI. Strong	Felt by all, many frightened. Some heavy

	furniture moved; a few instances of fallen plaster. Damage slight.
VII. Very strong	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII. Severe	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX. Violent	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X. Extreme	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.
XI. Extreme	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipe lines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
XII. Extreme	Damage total. Waves seen on ground surfaces. Lines of sight and level distorted. Objects thrown upward into the air.