

# Kobe vs northridge earthquake essay sample

[Environment](#), [Earth](#)



Earthquakes can be devastating natural disasters as experienced in the Kobe earthquake in Japan. However, earthquakes are not what kill people, being unprepared is what causes the most harm. In the Northridge earthquake in California which was of very similar magnitude to the Kobe earthquake there were far less casualties. However, being prepared was not the difference in these cases. Factors that created such a huge difference in damage in Kobe were the high population density, the soft soil, the direction of the waves and the response time to the earthquake and its aftermath such as uncontrollable fires.

The Northridge and the Kobe earthquake had many similarities, such as they were both in the morning and consisted of about the same magnitude. Neither earthquake was expected as neither was on a fault already known to geologists. Both Northridge and Kobe are on fault edges and now it is realized that there are many blind faults that could erupt at any given time. In both locations the fault lines are not in a straight line so, when they begin moving this causes cracks in the earth and as a result mountains are formed, this is showed in both Northridge and Kobe.

Kobe sits on four tectonic plates; Eurasian Plate, North American Plate, Pacific Plate and Philippine Plate. Because of this and the movement of the plates it causes earthquakes on the fault lines near the plates throughout all of Japan. As a result of the Kobe earthquake more than 5,400 people died whereas in the Northridge earthquake 57 people died. One of the major differences in these two earthquakes is the population density in the city of Kobe versus in Northridge. In Kobe millions of people live making the harm of an earthquake much more extensive and the potential to harm much larger. Whereas in <https://assignbuster.com/kobe-vs-northridge-earthquake-essay-sample/>

Northridge where the earthquake hit the population density is much less making the probability of harming more people less. With larger population density that means that there are more building structures and houses also, there is a better chance of more stories in household. However, in a location like Northridge where there are less people the houses are not as close together and they cannot domino each other and there are less people to harm.

Waves travel at a different speed in soft soil and in rock. When waves travel through rock they slow down and when they travel through soil, especially soft soil they move at a faster rate. This was another big difference between the damage in Kobe and Northridge. In Northridge where the earthquake hit its strongest point was in the mountains. This means that the strongest waves were sent into the mountains which are made out of rock so the waves began to slow down. Once they bounced off of the rock they hit Northridge but at a slower rate than they initially would have. In Kobe the strongest point of the earthquake was in the center of the city on its soil. Because it hit the soil the speed of the waves were faster causing more damage. Also, the ports of Kobe were destroyed. This is because when soil moves at a fast rate the water in the soil rises to the top causing either sinkage immediately or for building to slowly begin to sink in as if it were quicksand and when the shaking ends the soil stills and hardens but the damage is already done. This is how the ports of Kobe greatly suffered.

Not only the speed but also the direction of the waves created a difference in damage between the two events. In Kobe there are mountains on the North

and a basin on the South so, the city sits in the center. When the waves hit the basin they bounce back into the city with a different pattern hitting the waves that bounced back off of the mountains in a different pattern causing massive damage in certain locations throughout the city. When the two waves meet going different directions at the surface there is massive amounts of damage. In Northridge they did not have this problem as their waves bounced off of the mountains and then were free to travel straight not causing massive amounts of damage. The differences between direction of waves and speed in soft soil and rock are important factors to recognize when comparing these two earthquakes.

For both earthquakes finding the center took a long time because there were square tops on the readings because the machines could not read the earthquakes as a result of their magnitudes. It took a long time before the outside world knew that there had been a devastating earthquake in Kobe and by the time the response team took action there were massive fires that killed many and were uncontrollable. The response of both earthquakes took longer then it should have because neither could get communication with the outside world. However, Kobe once again suffered the most. Its fires had taken over and killed many and the rest were trapped under buildings.

The response team was torn between maintaing the fires as best they could, until they ran out of water, or helping people who were trapped. The buildings in Kobe were collapsed completely and even freeways that were not fitted with metal or built for earthquakes were heavily damaged. The old

houses of Kobe were made of mud and straw and the ceilings had heavy tiles which collapsed easily in the earthquake. Gas manes and domestic pipe lines exploded which caused the fires and killed thousands. Kobe was not ready for such a disaster and most deaths occurred because of the fires and buildings falling.

Kobe suffered a massive amount of damage especially when compared to Northridge. It was a lesson to be learned from. All major cities now know that they need to brace for an earthquake that can happen at any time. It is unpredictable and unavoidable and in order to avoid another tragedy we must learn from past earthquakes.