Name \_\_\_\_\_ Date \_\_\_\_

**Use the video link to answer the questions:** [**http://somup.com/cZjVorG08L**](http://somup.com/cZjVorG08L) **(43:31)**

1. What happened on January 17, 1995 as Japan’s worst disaster since WWII? Give details.

2. Describe the Northridge, California earthquake?

3. What started the fires as a result of an earthquake?

4. Describe the situation of firefighters in Kobe in effectively addressing the fires?

5. What kinds of houses were built in Kobe which added to the destruction?

6. What earth features run through Kobe and around Japan that produce earthquakes?

7. How many plates run through or near Japan, and what are their names?

8. What two plates split California and how far do they move past each other each year?

9. How many earthquakes have been successfully predicted?

10. What is the only certainty about an earthquake? What are these events called?

11. What are the ingredients (in order) that lead to an earthquake?

12. What is the most dangerous aspect of an earthquake for people?

13. What will allow a building to collapse more easily than other buildings?

14. List some structural improvements to building decrease the damage due to earthquakes.

15. What structural improvements to roads decrease the damage due to earthquakes?

16. What is liquefaction? How does soil type play a role in earthquakes?

17. What adjustments based on soil type can withstand shock waves?

18. List the devastation of the Kobe earthquake to people, economy, etc.?

19. How is food storage handled to prepare for earthquakes?

20. Describe the two major seismic waves? Which is most destructive?

21. How has technology helped in the early detection of an earthquake?

ANSWERS

1. What happened on January 17, 1995 as Japan’s worst disaster since WWII? Give details.

*Earthquake of magnitude 6.9 … killing 5000 people*

2. Describe the Northridge, California earthquake?

*Earthquake of magnitude 6.7, killing 57 people*

3. What started the fires as a result of an earthquake?

*Sparks from fallen power cables ignited gas mains; gas stoves added to the fire.*

4. Describe the situation of firefighters in Kobe in effectively addressing the fires?

*Lack of seismic information did not alert firefighters; the roads were mostly closed down due to earthquake damage; do they fight the fire or saved people? Water reserves ran out.*

5. What kinds of houses were built in Kobe which added to the destruction?

*Wood with roof having heavy tiles (to protect against Typhoon). Walls were made of straw and mud. Roofs had stone ornaments.*

6. What earth features run through Kobe and around Japan that produce earthquakes?

*faults*

7. How many plates run through or near Japan, and what are their names?

*4; Pacific, Philippine Sea, Eurasian, North American*

8. What two plates split California and how far do they move past each other each year?

*Pacific & North American plates move a couple inches per year (growth of fingernails)*

9. How many earthquakes have been successfully predicted?

*none*

10. What is the only certainty about an earthquake? What are these events called?

*Small earthquakes always follow a big earthquake, called after shocks.*

11. What are the ingredients (in order) that lead to an earthquake?

*Fault, rupture, shaking.*

12. What is the most dangerous aspect of an earthquake for people?

*Collapsing buildings.*

13. What will allow a building to collapse more easily than other buildings?

*Open spaces like lobbies, shop fronts, garages, “soft stories”.*

14. List some structural improvements to building decrease the damage due to earthquakes.

*Make a stronger, broader foundation; reinforce with steel.*

15. What structural improvements to roads decrease the damage due to earthquakes?

*Reinforce the entire roadway with metal jackets*

16. What is liquefaction? How does soil type play a role in earthquakes?

*The ground shook so hard that it flowed. Soft soil amplifies shock waves becoming like a thick liquid when vibrating.*

17. What adjustments based on soil type can withstand shock waves?

*Make foundations long and deep, reaching down to bedrock below.*

18. List the devastation of the Kobe earthquake to people, economy, etc.?

*300,000 homeless, 5400 deaths, 180,000 buildings destroyed, cost $147 billion*

19. How is food storage handled to prepare for earthquakes?

*Food cannot be stored in a central location, but spread out.*

20. Describe the two major seismic waves? Which is most destructive?

*Vertical P waves (primary); horizontal S waves (secondary) = most destructive.*

21. How has technology helped in the early detection of an earthquake?

*Communication: early warning system. E.g. stop trains, warn people to get off dangerous structures*