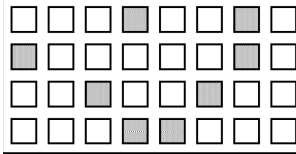


AIM: How do geologic events affect human beings and other living things?

Do Now:

- 1) What is an isotope's half-life? _____

- 2) The diagram below represents the proportion of radioactive and decayed atoms in a rock. Is this rock younger or older than its half-life? _____ Explain in detail how you know: _____



KEY:
 Decayed atoms
 Undecayed atoms

- 3) Which of the following cities would contain bedrock made of gravels, sands and clays?
 - a. Elmira
 - b. Syracuse
 - c. Watertown
 - d. Riverhead

Explain you reached your answer:

Earthquakes:

- 1) What is the plate tectonic theory? _____

- 2) Where are earthquakes most likely to happen? _____
- 3) How many seismic stations do you need in order to find the epicenter of an earthquake? _____
- 4) If the p-wave arrival time was 10:00:00 and the s-wave arrival time was 10:03:20, what is the distance to the epicenter? Explain in detail how you found this answer: _____

- 5) Where do the deepest earthquakes occur? _____
- 6) Read the story below about the Earthquake in Haiti and then answer the questions below:

January 13, 2010
 An Earthquake Shakes Haiti by Vickie An
 A powerful earthquake rocked the Caribbean nation of Haiti on Tuesday. The magnitude 7.0 quake struck 10 miles outside of the country's capital, Port-au-Prince, at 4:53 p.m. Officials fear that tens of thousands of people may be dead. Many people were injured and more are still missing.

Residents walk past crumbled buildings on Tuesday in Port-au-Prince, Haiti, after a massive earthquake struck the poor Caribbean nation. Tuesday's tremor was the strongest to hit the region since 1770, said Kristin Marano of the U.S. Geological Survey. The quake leveled thousands of buildings, from schools to the National Palace, the President's home. The tremors cut off electricity and phone service. Neighborhoods were crushed, leaving tens of thousands of people homeless.

The tremor was also felt in the neighboring island of Cuba and in the Dominican Republic, which is also part of the island of Hispaniola, along with Haiti. No major damages were reported in either country. Strong aftershocks continued to shake up Port-au-Prince's 2 million residents after the initial tremor died down. Stunned survivors walked through the rubble searching for loved ones, coworkers and neighbors. Many people found comfort by gathering together in public squares to sing hymns.

Haiti is the poorest nation in the Western Hemisphere. About 80% of the country's 9 million people live in poverty. Years of political turmoil have left Haiti with no real safety standards for buildings. In November 2008, after the collapse of a school, the mayor of Port-au-Prince estimated that more than half of the city's buildings were unsafe. President Barack Obama and other world leaders were quick to offer support for Haiti and its people. "We have to be there for them in their hour of need," Obama said. A U.S. disaster relief team is flying into the area today, said Rajiv Shah of the U.S. Agency for International Development. International aid groups, including the Red Cross, have also announced plans to send aid.

The hospitals that weren't damaged in the quake are overflowing with victims. Help can't come soon enough. "Haiti needs to pray," said Dr. Louis-Gerard Gilles. "We all need to pray together."

- a) Why did people in Port-au-Prince, Haiti feel more intense damage from the earthquake than people in Cuba and the Dominican Republic?

- b) What are two emergency procedures that people living near earthquake zones should take in order to prepare for an earthquake?

Volcanoes:

- 1) Where are volcanoes most likely to occur? _____
- 2) Explain why the location at 35°S and 160°E is more likely to have a volcanic eruption than the location at 50°N and 80°E? _____

- 3) Contrast the cooling rate of magma with the cooling rate of lava: _____

- 4) How would an igneous rock that formed from magma be different from a rock that formed from lava (elaborate and use examples)

- 5) What are three ways to tell that a rock is igneous? _____

- 6) What happened in Pompeii in 79AD? _____

Mudslides:

- 1) What is weathering? _____
- 2) What is erosion? _____
- 3) What are the agents of erosion? _____
- 4) What is mass movement? _____
- 5) How would the sediments deposited by a mudslide be different than sediments deposited by a stream? _____

- 6) Explain why it is likely that the fragments in a sedimentary conglomerate rock came from sediments deposited by a stream:

- 7) Explain why it is likely that the fragments in a sedimentary breccia rock came from sediments deposited by a glacier or mass movement event: _____

- 8) Why are mudslides so dangerous to humans? _____

Summary and Reflection: