**Earthquake Prediction**

Scientists are a long way from being able to predict earthquakes. A good prediction must be accurate in terms of where an earthquake will occur, when it will occur, and what magnitude it will be. This information is need to decide whether and when people should be evacuated from an area. An unnecessary evacuation due to an inaccurate prediction would be expensive. It also might cause people to disregard future evacuation orders.

Where an earthquake will occur is the easiest factor to predict. Scientists know that earthquakes take place at plate boundaries and tend to occur where they have occurred before. Earthquake-prone communities should always be prepared for an earthquake. For example, they can implement building codes to make structures earthquake safe.

When an earthquake will occur is much more difficult to predict. The stress on rocks along a fault builds up at a constant rate, so earthquakes should occur at regular intervals. However, this is not always the case. For example, near Parkfield, California, an earthquake of magnitude 6.0 or higher occurs about once every 22 years on average. Based on the dates of previous earthquakes, seismologists predicted that the next earthquake would strike the area in 1993, but it didn’t occur until 2004.

Sometimes certain signs precede large earthquakes. Small earthquakes called foreshocks may occur as stress builds up before a major earthquake. Rocks around a fault may dilate and develop fractures as stress builds up in them. Water levels in wells may fluctuate as water moves into or out of rock fractures. The ground may start to tilt with building stress. Although these changes often precede large earthquakes, they don’t always occur. There have been many reports of animals behaving erratically before earthquakes. Whether animals can actually sense imminent earthquakes is not clear. It they can, scientists do not know what it is they are sensing.

**Questions**

1. If scientists could predict earthquakes, why would accurate predictions be important?
2. What is the easiest factor to predict about earthquakes? Why?
3. Identify signs that sometimes precede large earthquakes. Why are these signs not very useful for predicting earthquakes?