

Write one important fact from each paragraph in this space.

Science Shorts -7

Quake, Tremble and Roll

An earthquake sends no warning. It is one of nature's terrifying surprises. It begins with a tremor, a shaking, rolling motion underfoot. It might even be mistaken for the rumbling of a truck. During the next few seconds, buildings sway and window shatter, disturbed by the sudden shock to the earth's surface.

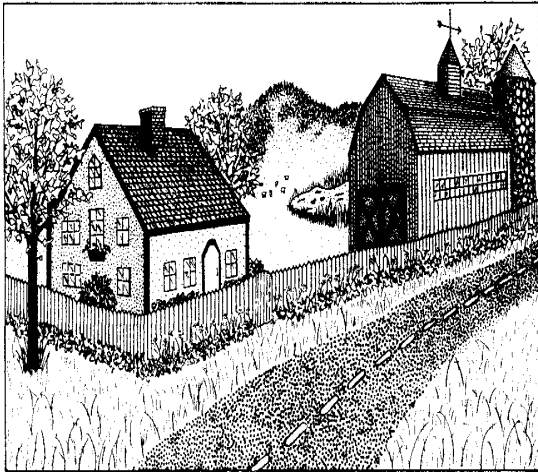
Scientists say there may be as many as a million earthquakes in a single year. Most of them are not destructive and cause no damage. However, the severity of others is much greater. Earthquakes can set whole cities on fire, bring buildings crashing down and cause many deaths. Scientists know that earthquakes are caused by plate tectonics. There are a number of huge plates made up of rocks under the earth's crust. These plates are in slow but continuous motion. They travel about one-half inch to four inches a year. Because the plates are not traveling in the same direction, sometimes two of them collide.

When two plates collide, they exert pressure against each other, creating friction and building up potential energy. At the crucial moment that the strain becomes too great, the rocks break, transforming the potential energy into kinetic energy. This break causes shock waves that move in all directions. When the shock waves reach the surface, the earth begins to shake and tremble - kinetic energy.

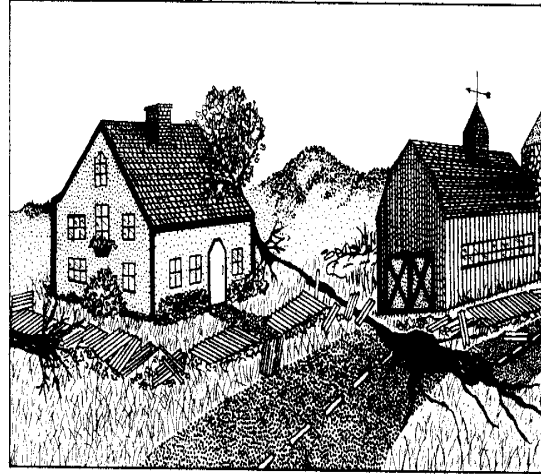
The movement of the plates is also responsible for the creation of some mountains. When one plate is forced upward by another plate, it disrupts the earth above, tearing it apart. The earth that is pushed upward becomes a new mountain.

The plates do not have the same outlines as landmasses on earth. Each plate goes beyond the contour of the continents, out underneath the oceans. In fact, the plates cannot even be identified with a specific hemisphere. In other words, the plates have shapes and movements all their own. They move under the earth's crust year after year. Yet these movements are not audible to the human ear. It is only when we hear the commotion created by an earthquake, feel the tremors and see the destruction that we are reminded of the presence of the plates.

BEFORE



AFTER



1. Make 5 observations of the BEFORE picture.

2. Make 5 observations of the AFTER picture.

3. What caused the damage in the AFTER picture? _____

4. What force keeps the plates from moving? _____

5. What type of energy was building up? _____

6. What type of energy was released when the shockwave started? _____

7. How far do plates move in a year? _____