

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

## Answer Key: Uncharted: Plate Tectonics and Earthquake Survival - 5th Grade

Seismic wave analysis, tectonic boundary mechanics, and oceanic trench formation — empower young geologists to map the forces reshaping our planet's crust.

---

**1. Imagine you are exploring the bottom of the ocean and find a deep, narrow canyon called the Mariana Trench. What is happening to the Earth's crust here?**

**Answer:** B) One plate is sinking beneath another into the mantle.

At subduction zones, a denser oceanic plate sinks beneath a lighter plate, creating deep ocean trenches.

**2. Scientists use a tool called a \_\_\_\_\_ to record the vibrations and shaking caused by an earthquake.**

**Answer:** C) Seismograph

A seismograph (or seismometer) detects and records the ground motion during seismic events.

**3. True or False: Most of the world's active volcanoes and frequent earthquakes happen along the edges of the Pacific Ocean in an area called the Ring of Fire.**

**Answer:** A) True

The Ring of Fire is a major area in the basin of the Pacific Ocean where many earthquakes and volcanic eruptions occur due to plate boundaries.

**4. Deep inside the Earth, rock is so hot that it melts into a thick liquid. What is this underground liquid rock called?**

**Answer:** B) Magma

Molten rock is called magma when it is underground and lava once it breaks through to the surface.

**5. True or False: Tectonic plates move very quickly, traveling about the same speed as a slow-moving car.**

**Answer:** B) False

**Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Tectonic plates move very slowly, usually only 1 to 10 centimeters per year, which is about the speed your fingernails grow.

**6. When tectonic plates move, they often get stuck due to friction. When they finally snap loose, the sudden release of energy is called an \_\_\_\_\_.**

**Answer:** B) Earthquake

Earthquakes occur when built-up stress between plates is suddenly released as seismic energy.

**7. Which type of volcano is built from many layers of cooled lava and ash, often forming a tall, majestic peak like Mount Fuji in Japan?**

**Answer:** C) Composite (Stratovolcano)

Composite volcanoes are built of alternating layers of lava flows and ash, creating the classic cone shape.

**8. The very top layer of the Earth, which includes the continents and the ocean floor, is known as the \_\_\_\_\_.**

**Answer:** D) Crust

The crust is the outermost solid shell of Earth, comprised of the oceanic and continental crust.

**9. In 1963, a volcanic eruption in the ocean near Iceland created a brand new island called Surtsey. This happened because plates were pulling apart. What is this type of boundary called?**

**Answer:** B) Divergent Boundary

Divergent boundaries occur where plates move away from each other, allowing magma to rise and form new land.

**10. True or False: Large mountains, such as the Alps in Europe, are often formed when two continental plates crash into each other and push the land upward.**

**Answer:** A) True

When two continental plates collide (convergent boundary), neither sinks easily, so the crust buckles and folds upward into mountains.