EARTHQUAKES – KEY

1 **Answer the following questions in your own words.**

1. What can cause earthquakes? Give a few examples. **sudden movement of plates; volcanoes that suddenly erupt; meteorites that hit the earth; underground explosions; buildings that collapse**
2. What do continents move on? **plates**
3. What happens when plates come together? **magma, lava comes out of the inner part of the Earth; rock is pushed upwards**
4. Why do many earthquakes happen at the bottom of the ocean? **the Earth's crust is thinner there**
5. Why don't we hear about most of the earthquakes? **most of them are weak or happen where few people live; some take place on the sea floor**
6. What is the Ring of Fire? Where is it located? **volcanic activity and earthquakes around the Pacific Ocean**
7. How many earthquakes happen in Japan every year?**2000**
8. Describes the two types of waves that earthquakes produce. **body waves are fast waves that move through the inner part of the Earth; surface waves move slower but do more damage**
9. How do humans cause earthquakes? **man-made lakes are filled with water; test of atomic bombs**
10. With which instruments are earthquakes measured and registered? **seismograph**
11. What do the terms hypocentre and epicentre mean? **hypocenter is where the earthquake actually takes place; epicenter is the place on the surface exactly above the hypocenter**
12. What is the Richter scale? **it is used to measure how strong earthquakes are**
13. How strong was the largest earthquake ever measured?**9.5**
14. What happened in San Francisco in 1906? **big earthquake destroyed most parts of the city; many houses caught fire because they were made of wood**
15. What are tsunamis? **giant waves that move toward the coast after an underwater earthquake**
16. What other problems can earthquakes lead to ? **destruction of water supplies; diseases**
17. In which ways can we protect ourselves better today than 50 years ago? **scientists can better predict where earthquakes may happen; buildings and houses use steel and concrete in earthquake zones**

2

Multiple Choice Test

Choose the correct answer for each question.

1. **The reason for most earthquakes is**
   a. a volcanic eruption.
   b. a wave of meteorites that hit the Earth.
   c. a sudden movement of the Earth's plates.
   d. a series of underground explosions.
2. **Surface waves**
   a. cause the most damage.
   b. can travel through rock and water.
   c. are at the beginning of an earthquake.
   d. move faster than body waves.
3. **The place where an earthquake takes place is called the**
   a. epicentre.
   b. seismometre.
   c. body.
   d. focus.
4. **Some plates meet at the bottom of the ocean because**
   a. the Earth's crust is too thick.
   b. there is a lot of lava in the rocks.
   c. the area is farthest away from land.
   d. the Earth's crust is very thin there.
5. **The strongest earthquake ever recorded on the Richter scale had a magnitude of**
   a. 9.5.
   b. 7.6.
   c. 10.0.
   d. 8.2.
6. **Breaks in the Earth's crust are called**
   a. eruptions.
   b. epicentres.
   c. seismometres.
   d. faults.
7. **Most of San Francisco was destroyed after the 1906 earthquake because**
   a. the city was very small at the time.
   b. a tsunami flooded the city with water.
   c. the houses were very old.
   d. a fire burned down most of the wooden buildings.
8. **Most of the world's earthquakes occur**
   a. in Central Asia.
   b. in the middle of the Pacific Ocean.
   c. in the middle of the Atlantic Ocean.
   d. around the Pacific Ocean.

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3 **Match the words on the left with the definitions on the right.**

A	collapse		**J**	movable, to come free, not fixed
B	concrete		**I**	a period of ten years
C	volcano		**F**	to break out or explode
D	surface		**P**	one of the very large sheets of rock that form the surface of the Earth
E	disaster		**B**	a very hard material made of cement
F	erupt		**H**	border; outer part of
G	landslide		**A**	to break down
H	edge		**O**	to write down information
I	decade		**N**	the top layer of rock
J	loose		**L**	how strong or powerful an earthquake is; it is measured on the Richter scale
K	fault		**Q**	if something doesn't move and stays in the same place
L	magnitude		**D**	the top layer of something
M	weak		**K**	where two plates meet
N	crust		**M**	not very strong
O	record		**C**	a mountain that often explodes and rock, gas and lava come out of it
P	plate		**G**	rocks move down mountains and destroy houses or block roads
Q	stable		**E**	when something very dangerous happens and a lot of people die

EARTHQUAKES – KEY

4 **TRUE or FALSE. Decide if the sentences are True or False and tick them off (✓). If the sentence is false write a correct statement into the box on the right. The first TWO have been done for you.**

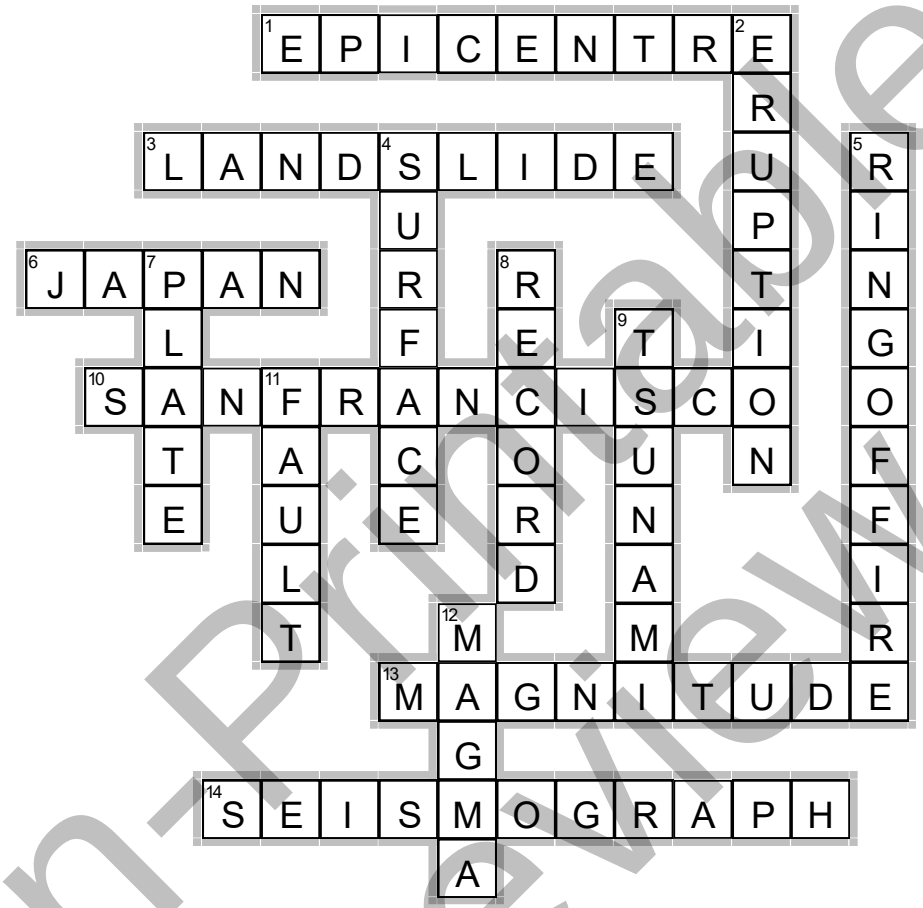
		T	F	Correct Statement
1	Today, it is important to use wood when you construct houses or buildings in earthquake zones.		✓	**Cement and steel are used to protect buildings from earthquakes.**
2	Big earthquakes can be found where plates meet	✓		
3	When there is a sudden movement in the Earth's crust, energy is set free and moves in the form of waves.	✓		
4	Most earthquakes occur after big volcanoes erupt.		✓	**Most earthquakes occur through sudden movements along plates.**
5	In 1906 many houses in San Francisco burned down because they were made of wood.	✓		
6	Earthquakes can also be caused by underground explosions.	✓		
7	The Earth's crust is thinnest under the continents.		✓	**The Earth's crust is thinnest on the sea floor.**
8	The place on the surface where the most damage is done is called the epicentre.	✓		
9	Earthquakes that happen on the ocean floor are called tsunamis.		✓	**Tsunamis are the huge waves that spread to the coast because of earthquakes on the ocean floor.**
10	The Richter scale tells you how many people died in an earthquake.		✓	**It tells you the magnitude of an earthquake, how strong it is.**
11	Faults are places where two plates meet. They can be hundreds of km long.	✓		
12	An instrument records how strong earthquakes are is called a hypograph.		✓	**Earthquakes are measured and registered with a seismograph.**
13	The Ring of Fire is around the Atlantic Ocean. Most of the world's biggest quakes occur here.		✓	**The Ring of Fire is around the Pacific Ocean.**

EARTHQUAKES – KEY

5 **Match the beginnings of the sentences on the left with the endings on the right. There are TWO endings you will not need.**

A	Most of San Francisco was destroyed in 1906		**B**	can cause big waves called tsunamis.
B	An earthquake in the ocean			~~deep in the earth's core.~~
C	In 2011, a 9.1 earthquake in Japan		**G**	for millions of years.
D	The strongest earthquake ever registered		**F**	exactly above the focus.
E	When two plates meet on the ocean floor		**M**	and can travel very fast.
F	The epicentre of an earthquake is on the surface		**H**	with a seismograph.
G	Continents have been moving on plates		**I**	occur along the Ring of Fire.
H	The magnitude of earthquakes is measured		**A**	because a fire spread through the city.
I	Most of the major earthquakes		**K**	new mountain ranges are formed.
J	Earthquakes occur through a sudden vibration		**D**	had a magnitude of 9.5.
K	When plates push towards each other		**L**	volcanoes erupt in geologically active areas.
L	In addition to earthquakes			~~cause rocks to get loose.~~
M	Body waves move through the inner part of the Earth		**E**	magma forms underwater mountains.
			J	in the Earth's crust.
			C	led to the Fukushima nuclear disaster.

6 Crossword



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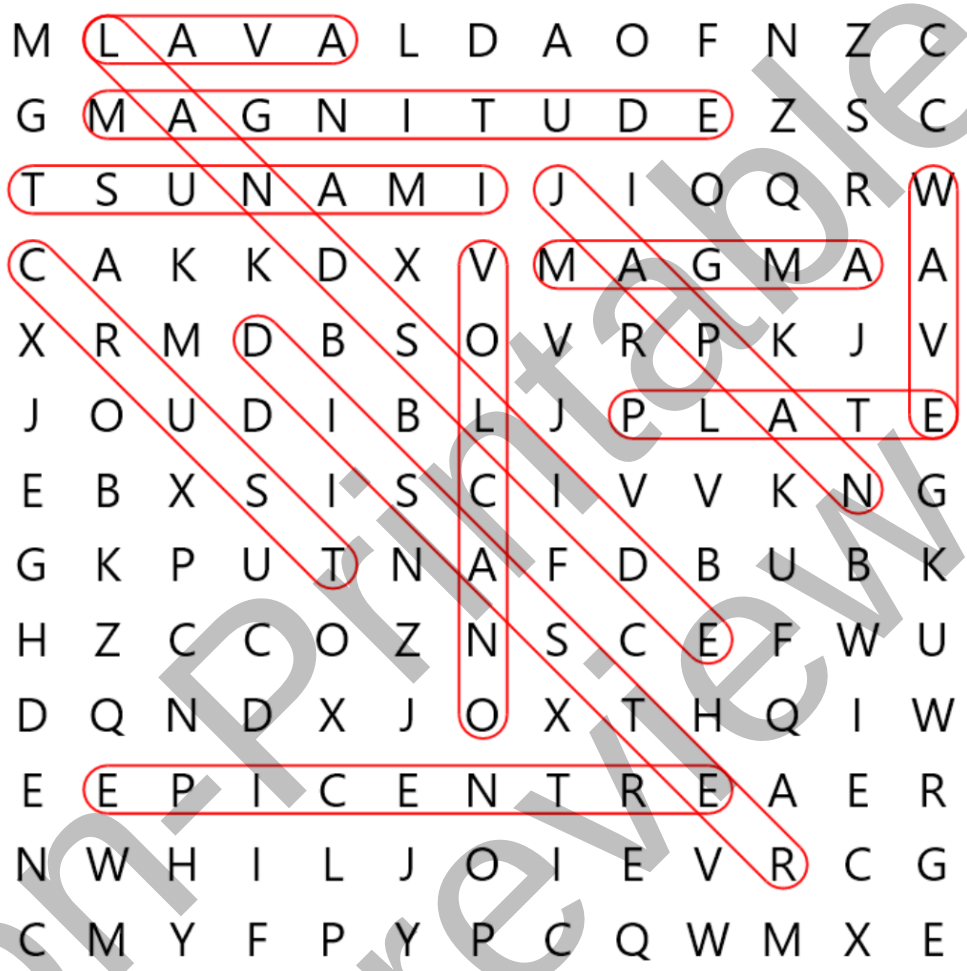
7 **Find 12 words about earthquakes in the grid below.**



8 **Complete the text with the words from the box. There are TWO words you will not need.**

damage - destroyed - energy - formations - geologists - magnitude - major - mountains - movement - near - occurred - plates - predict - suffer - tension - trigger

The San Andreas Fault

The San Andreas Fault runs through California and is one of the **(1)** **major** earthquake lines in the world. Geologists now **(2)** **predict** that a major earthquake, the so-called "Big One" will occur somewhere along that line soon.

While the northern part of the fault has been hit by earthquakes several times, the last big tremor in the southern section of the San Andreas Fault happened in 1857, when a **(3)** **magnitude** 7.9 earthquake hit the mountains near Los Angeles. Scientists say that so much tension lies in the rock **(4)** **formations** of the southern part of the fault that the "Big One" may hit the area soon.

The Oakland Bay area, which lies almost directly above the San Andreas Fault has been hit by major earthquakes more often. In 1906, a 7.8 earthquake hit San Francisco. It **(5)** **destroyed** large parts of the city and killed 3,000 people. In 1989 another strong earthquake with a magnitude of 6.9 **(6)** **occurred** south of San Francisco.

The San Andreas Fault separates two large geological **(7)** **plates** - the Pacific Plate and the North American Plate. Because continents on Earth are in steady **(8)** **movement** , the two plates are moving past each other at a rate of about 2 inches (5 cm) per year. At some point tension inside the Earth's crust gets too big and **(9)** **energy** is released. While there is no way of forecasting when an earthquake will hit a region, **(10)** **geologists** think there is a good chance that a tremor with a magnitude of 7 or 8 will hit southern California sometime in the **(11)** **near** future.

An abrupt movement along the plates may even **(12)** **trigger** a series of movements throughout the area. California's largest city, Los Angeles, is only 30 miles away from the fault and may **(13)** **suffer** severe damage.

Studies show that a major earthquake can produce **(14)** **damage** of up to $200 billion dollars and lead to over 2,000 deaths.