

UNDERNEATH IT ALL

In the action thriller *San Andreas* (in theaters May 29), a magnitude 9 earthquake rocks California. But that's just the beginning, as a rescue pilot (Dwayne Johnson) and his estranged wife join together for the treacherous journey north, from Los Angeles, to save their daughter, Blake, in San Francisco.



PART 1: EARTHQUAKE SCIENCE

As the film opens, we watch how Earth has changed over millions of years. Huge slabs of rock shift and slide, colliding to form mountain ranges like the Himalayas, cracking apart to create oceans and canyons. These gigantic slabs of rock are called **tectonic plates**, the puzzle-pieces that make up the surface of the Earth — except that, unlike puzzle-pieces, they move and shift position, even today.

Some plates are being pulled apart; this is called a **divergent boundary**. Others are pushing into one another at what is called a **convergent boundary**. And in some places, the plates slide against one another, the way you might rub your hands together to keep warm. This is called a **transform boundary**. Pressure builds here as the plates rub against each other until, one day, they finally break free with a release of pressure that we feel as an earthquake.



This map shows the boundaries of Earth's major tectonic plates and the direction each plate is moving. Circle the places where earthquakes are most likely to occur.

PART 2: EARTHQUAKE TERMINOLOGY

San Andreas is the name of a fault that runs through most of California. Label it on the map. Then research these terms used to describe the earthquake that occurs in the film *San Andreas*. Write the definition of each term on the back of this sheet, then, after you have seen *San Andreas*, circle the terms you recognized and discuss the scientific accuracy of the film.

Epicenter
Fault

Moment magnitude
Radon count

Richter scale
Seismic waves

Transform boundary
Tsunami

WHERE WILL YOU BE?

SAN ANDREAS

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