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Our experts explain how.Learn MoreThe Motorsport Images Collections captures events from 1895 to today’s most recent coverage.Discover The CollectionCurated, compelling, and worth your time. Explore our latest gallery of Editors’ Picks.Browse Editors' FavoritesHow can financial brands set themselves apart through visual storytelling? Our experts explain how.Learn MoreThe Motorsport Images Collections captures events from 1895 to today’s most recent coverage.Discover The CollectionCurated, compelling, and worth your time. Explore our latest gallery of Editors’ Picks.Browse Editors' Favorites Plate tectonics is the scientific theory that describes the large-scale motions of Earth's lithosphere. The lithosphere is divided into several large and small tectonic plates that move over the semi-fluid asthenosphere beneath them. This movement is responsible for various geological phenomena such as earthquakes, volcanic activity, and the formation of mountain ranges.Key ConceptsTectonic Plates: These are large and small pieces of the Earth's lithosphere that move and interact with each other. The major tectonic plates include the Pacific Plate, North American Plate, Eurasian Plate, African Plate, South American Plate, Antarctic Plate, and Indo-Australian Plate.Plate Boundaries: These are the regions where tectonic plates meet and interact. There are three main types of plate boundaries: divergent boundaries, convergent boundaries, and transform boundaries.Geological Features: Plate tectonics is responsible for the formation of various geological features such as mountains, ocean trenches, volcanic arcs, and mid-ocean ridges.Earthquakes and Volcanoes: The movement and interaction of tectonic plates result in seismic activity and volcanic eruptions along the plate boundaries.Study GuideTo understand plate tectonics, it's important to grasp the following key points:Studying maps of tectonic plate boundaries, watching animations of plate movements, and examining geological cross-sections can all help in visualizing the concepts related to plate tectonics.Understanding plate tectonics is crucial for understanding the Earth's dynamic processes and the distribution of geological hazards. It provides a framework for explaining major geological events and shaping the Earth's surface over millions of years.. FailsRediģētSkatītRīkiPalīdzībaPieejamībaAtkļūdot California's most famous fault is the San Andreas Fault and it is a strike-slip fault. Draw the San Andreas Fault on the map of California below and label the two different kinds of faults shown in the diagrams. 250 million years ago there was only a single continent named Pangaea as shown in the first figure below. Cut out the plates along the dotted lines and reassemble them on a separate sheet of paper. The Earth's crust is made of a set of tectonic plates, rigid rock, that are always in motion. Some of them have boundaries along the edges of the continents, but other boundaries are in the middle of the ocean. Some of these plates are move toward each other and their edges come into contact. When one is pushed under another, a trench forms. The bottom edge descends down into the earth's mantle and melts into magma which can later rise and break through the earth's crust and result in a volcano. Most oil is obtained from deposits thousands of feet beneath the Earth's surface. The oil is trapped under layers of nonporous rock like shale and these prevent the oil from passing through the rock layers. Coral reefs are formed by the growth of coral over long periods of time. Coral reefs are classified by the shape the reef has grown into and any bodies of water they enclose. Below you will find a chart of the deadliest earthquakes recorded each year. Rank the earthquakes by the number of fatalities caused. Place a 1 next to the earthquake with the least fatalities, 2 for the earthquake with the next greatest number of fatalities, and so on. What was the average number of fatalities caused as the result of major earthquakes that occurred between 1997 and 2006? Describe the composition each layer of the Earth. Use the image to help you better understand the regions that we are talking about. Label the layers of the Earth. use the numbered regions to help you. Just label the three main layers. Break it up into something helpful. It's just like we scooped out the ground. A key that is looking for functional definitions to better understand the role of each part. Scientists use a magnitude scale to express the energy released by an earthquake. What was the location of the largest earthquake between 1996 and 2006? Geology studies Earth’s history and the processes that shape our planet, and some of the essential features of our world are its tectonic plates. When combined, these plates form a solid surface surrounding the molten lava core yet can move over large distances through tectonic processes. It’s important to know precisely what they are, though. A tectonic plate is a large, solid plate of the Earth's crust and uppermost mantle, which is moved by convection currents from the asthenosphere and other underlying heat sources. There are dozens of these plates. They’re mobile, often shifting and colliding to drive change on the planet's surface. Tectonic activity is responsible for the creation of earthquakes and mountains. The tectonic plate is a large piece of Earth’s crust dividing the lithosphere. These are rigid slabs of the Earth’s crust floating on top of the denser mantle below. There are three types: Oceanic Continental Transitional Oceanic plates typically contain only oceanic crust, while continental plates contain both oceanic and continental crust. Most tectonic plates containing continental crust can be considered part of six significant continents: Africa Antarctica Australia/Oceania Asia South America Europe Where two plates meet is a plate boundary. These are known as either convergent, divergent, or transform boundaries. How Do They Move? They are constantly moving about a quarter of an inch per year. These plates move around over a viscous mantle layer beneath them. These plates move when the convection currents within the mantle drive them to do so. These currents heat rocks beneath the surface, causing them to expand and rise near the edges of the plate. As they rise, they push up against the overlying crust, which causes it to spread out on either side. The spreading continues until there is no more room for it, then another plate begins to form at its edge. The result is subduction zones, where one plate is forced below another into the Earth’s interior. The plates are constantly in motion, but they move at different rates from each other. Friction can be caused by two plates sliding along one another at a transitional boundary, leading to earthquakes and volcanic eruptions. What Happens When They Move? The movement of tectonic plates is slow but can cause drastic changes to our world. As they move, they interact and cause earthquakes and volcanoes. When the plates converge, they can create mountain ranges like the Himalayas. They can also make ocean basins such as the Pacific Ocean if they diverge. The collisions between these moving plates are also thought to have caused mass extinctions in the past when they caused massive fires or even giant tsunamis! Let us look at how these movements help to form and initiate earthquakes and volcanoes. Earthquakes Earthquakes are caused when two tectonic plates collide or rub against each other. The collision can happen over a long period as the plates slowly move to different positions. Most earthquakes happen along fault lines, which are cracks in the Earth’s crust and where the plates move. When two plates suddenly slip past each other, this causes an earthquake. Volcanoes Volcanoes are formed by hot molten rock that rises from deep within Earth’s mantle, then cools and solidifies before spreading out on the surface as lava flows. Most volcanoes form near subduction zones where the magma from deep within Earth rises to fill in gaps between the descending plates. Conclusion The tectonic plates on which we live have been moving for billions of years since they first formed as separate continents. It’s important to note that drastic tectonic movement happens over an extremely long period. These movements help cause many of the geological events that take place on Earth, including volcanic eruptions and earthquakes. Due to this, it is essential to study them. With the help of science and further research about our planet, we’ll continue to understand tectonic processes better.