Volcanoes and plate tectonics worksheet answers

The oldest documented earthquake occurred in China in 1177 B.C. But for most of history, people had no idea what caused them -- although they had some wild theories, it would be earthquakes of faith were caused by the air leaking from the caverns deep inside the Earth. It was not until the mid-1800s that scientists began to study and seriously measure the activity of the earthquake, using a device developed in Italy called a seismograph [source: USGS, Shearer]. Finally, in the mid-1960s, researchers in the United States and Britain came up with a theory that explained why the Earth shook [source: Silverstein]. The theory, called tectonic plates, is that the Earth's crust, or lithosphere, encompasses many plates that slide over a layer of lubricating asthenosphere. At the borders between these huge slabs of rock and soil, the plates sometimes spread away, and magma, or molten rock, comes to the surface, where it is called lava. Cools and forms new parts of the crust. The line where this happens is called a divergent plate limit. The plates can also push against each other. Sometimes one of the plates will sink under the other into the hot layer of magma under it and will partially melt. Other times, the edges of the two plates will push against each other and rise upwards, forming mountains. This area is called a converging plate limit [source: Silverstein]. But in other cases, the plates will slide against each other and brush against each other -- a bit like the drivers on the side of the highway, who are getting on each other, but very, very slowly. In the region between the two plates, called the transformation boundary, pent-up energy accumulates in the rock. It will form a fault line, a rupture in the Earth's crust where the blocks of bark move in different directions. Most, though not all, earthquakes happen along turn the boundary fault lines. We will investigate the different types of defects on the next page. The first question it raises is: what exactly is this material inside? On our planet, there's magma, molten, fluid rock. This material is partially liquid, partly solid and partly gaseous. To understand where it comes from, we need to consider the structure of planet Earth. The earth is composed of several layers, roughly divided into three mega-layers: the core, mantle and outer crust: We all live on the rigid outer crust, which is 3 to 6 miles (5 to 10 km) thick under the oceans and 20 to 44 miles (32 to 70) thick underground. This may seem pretty thick to us, but compared to the rest of the planet, it's very thin -- like the outer skin on an apple. Directly under the outer crust is the mantle, the largest layer of The mantle is extremely hot, but for the most part, it remains in solid form because the pressure deep inside the planet is so high that the material cannot melt. In certain circumstances, however, the mantle material does not the formation of magma that makes its way through the outer crust. In 1960, scientists developed a revolutionary theory called plate tectonics. The tectonic plates claim that the lithosphere, a layer of rigid material composed of the outer crust and even the top of the mantle, is divided into seven large plates and several smaller plates. These plates float very slowly over the mantle below, which is lubricated by a soft layer called the asthenosphere. The activity at the boundary between some of these plates is the main catalyst for the production of magma. If the different plates meet, they usually interact in one of four ways: If the two plates move away from each other, an oceanic ridge or continental ridge is formed, depending on whether the plates meet under the ocean or on land. As the two plates separate, the rock of the mantle from the asthenosphere layer below is poured into the void between the plates. Because the pressure is not as high at this level, the mantle stone will melt, forming magma. As the magma flows, it cools, strengthening to form a new crust. This completes the gap created by divergent plates. This type of magma production is called the spread of central volcanism. At the point where two plates collide, a plate can be pushed under the other plate so that it sinks into the mantle. This process, called subduction, usually forms a ditch, a very deep ditch, usually in the ocean floor. As the rigid lithosphere descends into the hot, high-pressure mantle, it warms up. Many scientists believe that the sinking lithosphere layer cannot melt at this depth, but that heat and pressure force water (surface water and water from hydrated minerals) from the plate and into the mantle layer above. The increased water content decreases the melting point of the mantle rock in this wedge, causing it to melt into magma. This type of magma production is called the subduction zone volcanism. If the plates collide and no plate can subduct under the other, the crust material will just crumpled, pushing up the mountains. This process does not produce volcanoes. This type of limit can later develop into a subduction zone. Some plates move against each other rather than push or pull apart. These limits of transformation plates rarely produce volcanic activity. The war for the family room – and for the entire digital home – has been going on for a few years. At first, it seems that technology companies align on the one hand, and consumer electronics companies lined up on the other. Intel, AMD, Microsoft, and major PC companies lined up on the opening side and ease of access to media, while electronics companies consumption wanted to keep boxes closed and systems. But the lines got dark between factions, though the competition was no less fierce. The reason for blurring the lines was a faction in battle: Big Media. The RIAA and MPAA, desperate to keep business models creaking, have played a smart, alternative game throwing money at politicians while wooing technology companies. The result was increasingly intrusive digital management rights being adopted by technology companies. This has prevented, to some extent, easy access to the media that people pay good money for. In a way, consumer electronics companies weren't very happy about it. There have been increasingly adoptions of technologies that have not been fully ripe and tested. A good example of this is HDMI. HDMI itself is just a standard of transport. But it's a high-performance connection and is layered under HDCP content protection. Already, i've seen documented problems with some digital set-top boxes not handshaking properly with HDMI receivers on newer HDTVs. Imagine dropping three thousand or more on an HDTV, just to get a black screen when you connect up to the HDTV source. The expression consumer reaction comes to mind. It was simple: PCs were complex, TVs weren't. This mantra is no longer true- everything is complicated, and thus made useless, so the complexity of content protection and the growing need to churn new products. Some of the churn products is necessary, as new standards evolve. But EC companies are becoming like PC companies, increasing features and capabilities at a staunging rate, just because they can. The rapid acceptance of the DVD has broken them, to some extent, and they are all looking for the next large growth area to match the rapid growth of DVD technology, which is itself starting to shrink. Several interesting events have taken place in the last two weeks, which will have an impact, although no one is quite sure what to make of them. The easiest to understand is the release of Micrsosoft of Xbox 360. While the Xbox 360 is primarily a gaming console, it is also a media hub. Using Windows Media Connect software, you can channel digital music from any PC on Xbox 360. If you have a PC running Windows Media Center Edition, you can even get video. But Microsoft, in an attempt to assuage forces in Hollywood, makes this less easy than it should be. You can't break music on the 360 hard drive. After all, it's a portable drive, and users could move the music they own to another system. Also, Windows Media Connect will not allow you to use any storage space attached to your home network as a drive to provide music. After all, you might pipe music into several locations in your home! Don't be anchored to a picnic table, Vulcan Picnic Plate keeps you mobile while keeping food, drink, and utensils under control. Anyone who is loaded to a buffet line while trying to hold a plate and a cup knows that there is no easy way to put on a burger without finding room to lay something down. Something has to go. If you are lucky, there are a few inches of clear table space to set the drink down; If you don't, you're out of luck. Keep a free hand by using this Instructable to make Vulcan Picnic Plates; with a variety of different plates and hole sizes to accommodate the beverage container of your choice. Although different style containers can be used, there are two main methods of application: Method 1: Dedicated Container (preferred) - With this method, the volcano plate is sized for a reusable bottle wide mouth sports drink. (photo 1) Fill the bottle with your favorite drink and ice and slide the plate over the mouth of the bottle. A lid with a straw hole, screws on the glass to keep the plate in place. With this method, the plate is kept securely to the bottle. Pick up the drinking straw. The advantage of this method is that the wider glass can be used as pedestal to lift the plate when the glass unit & plate is placed on the ground. Also, since the two are well attached together you can hold the plate without the bottle giving up. Method 2: Louse Bottle - This method allows quick removal of the bottle for drinking, and empty change-out. (photo 2) The quick release of the drinking bottle means that the vial is always in the hand. (You can't just hold the plate; the bottle will slip.) Also, the plate and glass should not be placed together. The narrow base of the vial will not hold a plate of food from tipping over. Method 2 is good for the backyard-b-que rear bar where a new bottle can be taken from the cooler however, for camping, I prefer the water bottle screw cover from Method 1; with a secure plate that can be established from the ground. Sol.