GRE阅读：magnet VS. sharkGRE考试 PDF转换可能丢失图片或格式，建议阅读原文

https://www.100test.com/kao_ti2020/575/2021_2022_GRE_E9_98_85_E8_AF_BB_EF_c86_575742.htm During experiments at the Bimini Biological Research Station in the Bahamas, researchers Eric Stroud and Michael Hermann 0dropped a small magnet in the water beside a shark. The presence of the magnet elicited a distinct reaction from the fish -- they darted away from it. Why the intense reaction? The interaction of salt water and charged metals produces a weak electrical field（电场）. When a shark comes close to that field, the field seems to disrupt the sharks special sixth sense, electroreception（电感受）. Many shark species have pores dotted around their snouts called ampullae of Lorenzini（洛仑兹壶腹，鲨鱼用它来感受电场信号）that detect minute changes of electricity in the seawater, up to one-billionth of a volt. These electrical impulses come from the tiniest muscle contractions of other aquatic life forms -- or people -- and are carried through the ions in the salt water. What does salt water have to do with electricity? Salt water is an ionic solution, meaning it contains particles with unpaired electrons. Because of this quality, salt water can also act as an electrical conductor（导电体）. When a charged magnet comes into contact with salt water, the ions flow through the metal to become stabilized, resulting in the electrical field. We know that sharks can sense shifts in the surrounding underwater electrical fields through their ampullae of Lorenzini. Running into these stronger electric fields caused by magnets may overwhelm the sense and send them

swimming in the opposite direction. Yet, therein lies the problem. Initial testing revealed that the magnetic field only deters sharks up to around a foot (0.3 meters) away. If this is the case, people would need multiple magnets scattered across their bodies for adequate security. Also, you have to arrange the magnets with their poles facing outward because opposite poles attract. The distribution and weight of the additional metals could make it difficult to swim. A US patent application filed in November 2007 by Eric Stroud of SharkDefense describes installing Lanthanide electropositive（带正电的） metals into scuba flippers, a bracelet and a special belt that divers or swimmers can wear to ward off sharks. According to the application, the souped-up gear would repel sharks "within a few inches" of approaching them Hungry sharks may power through an uncomfortable electrical field. 