

Stuff Matters: Exploring the Marvelous Materials that Shape Our Man-Made World

Stuff Matters: Exploring the Marvelous Materials that Shape Our Man-Made World by Mark Miodownik was a book about how materials have shaped modern society. Everything around us is made of atoms. These atoms combine in unique ways to create different kinds of materials. Some of these materials are diamond, titanium, and glass. These three materials prove that materials are a reflection of history and society in many different ways.

Diamond is a valuable material. It is consisted out of carbon atoms, and was once the toughest known material on Earth. Another material that is consisted of carbon atoms is graphite. Graphite is used much more than diamond, as it is used in pencils and cores of nuclear reactors. Strangely, diamond is still the more popular of the two. Diamond is known for being extremely tough and extremely beautiful. These represent the societal values of humanity. We seem to value beauty on the outside more than beauty on the inside. Also, we strive to become tough and strong, and also always strive for beauty. Although it can be lab grown, natural diamonds are more valued, which shows our love of authenticity. When diamonds were first discovered, they were very expensive. This ended up creating a new job: a cat burglars. Diamonds are light and valuable, and even successfully stealing a single diamond could set someone up for life. Cat burglars took advantage of this and started attempting to steal diamonds. This didn't make them a barbaric thief, though. In films, diamond robbery was portrayed as a noble act, as cat burglars were required to be elegant, sophisticated, and unadulterated, just like a diamond. This shows that diamonds reflect the traits of humans and society.

Titanium is a tough element. It is a metal that is renowned for being extremely hard. This metal is used for many things, such as pacemakers and needles, which are both very important for healthcare. Titanium was discovered in recent times, and has been useful for modern society. It has developed healthcare and humanity, and will continue to develop. Finding these uses for titanium also shows off the ingenuity and adaptation of humanity. Although pacemakers and needles are really useful for humans, titanium is used for something even more useful: joint surgeries. The human body rejects most metals, but titanium is one of the few metals that it tolerates. Titanium will also go through osseointegration, which means that the titanium creates strong bonds with the living bone. This makes it the perfect material for surgeries. Titanium screws can be implanted into one's bone to bond it back together, and since the titanium only gets stronger the longer it is near the bone, it will stay together for a while. This benefits a lot of people, such as people whose joints started to not work as well because of old age, and people who have had injuries. The fact the titanium has played such a large role in society reflects how much we have developed, and it also reflects how much effort was put into discovering the

properties of titanium, and also shows that people will work tirelessly for other peoples' benefit.

Glass has helped humanity through many things, but it is very complicated to make. Glass is sand that has been heated at 1200°C. Every so often, glass can be found in the desert, as sometimes, lightning strikes the ground, superheating the sand for a brief moment. This glass isn't high quality glass, though. The sand struck by lightning is oftentimes gray, black, or slightly translucent. In order to make real glass, it would require very specific groups of materials, primarily quartz. In Ancient Rome, the Romans got very close to making modern glass. If a place with the right mix of material was found, they would mass produce glass, and trade it everywhere. Later, artisans created stained glass, and glass became even higher in status. This represents the fact that humanity will be more amazed by development the worse one was previously. After that, modern-day scientists created a way to make glass that was bulletproof and extremely tough. Nowadays, the glass market is huge, and is used for many things, which all show some part of humanity. Mirrors were difficult to make long ago, but when the Romans used glass to help make the mirror, it helped reflect society, literally. Glass is used for windows, which shows that humans feel more safe when they can see what's outside. This just goes to show that glass is just a reflection of the history of humanity, and how much we have developed.

All materials are a reflection of who we are, and an expression of human needs and desires. Diamond, titanium, and glass proves this statement, as they have all played very big roles in humanity. Without these materials, humanity would not be here today, which just shows how big of a role everything around us has played in some part of history.