

Product Design Sample Answer

Describe in detail any appliance in your house, or any item that you use on a daily basis that you consider to be well designed. Give a history of the design and outline the development of the features of the product. Give a description of your mobile phone and suggest any possible improvements to its design. Illustrate your answer.

For thousands of years, a variety of devices have been used to measure and keep track of time. The current sexagesimal system of time measurement dates to approximately 2000 BC from the Sumerians. Sundials and water clocks were among the most common methods of tracking time before the mechanical clock was invented in 1275 in England. During the 16th century, the use of brass, bronze and silver rather than iron was introduced. This allowed more intricate mechanisms to be developed. In the 1540s the watch industry was popularised after reformer John Calvin banned people from wearing jewellery. This forced jewellers to venture into another craft, watchmaking. Further on in 1574, the first known pocket watch was created in bronze with religious depictions on both the front and back. While pocket watches started to be produced in the late 16th century, they only depicted time to the hour. It was not until the late 17th century that minute hands were added to clocks. The second hand made an appearance later on but did not become extremely popular for some time. The increasing popularity of pocket watches was said to be of the influence of Charles II of England after he introduced waistcoats. Due to wearing the watch in a pocket rather than being protected in a pendant, the shape was flattened and curved to avoid any sharp edges protruding and damaging clothing. The face was covered with glass to protect the hands from damage.



The 1700s saw clock ownership becoming more widespread. Because clocks were becoming more mainstream, increased development with technology followed. The first self-winding mechanism was invented in 1770 by Abraham- Louis Perrelet. Jean-Antoine Lepine created a thinner movement in 1770 which also allowed watchmakers to make thinner watches, more easily concealed.

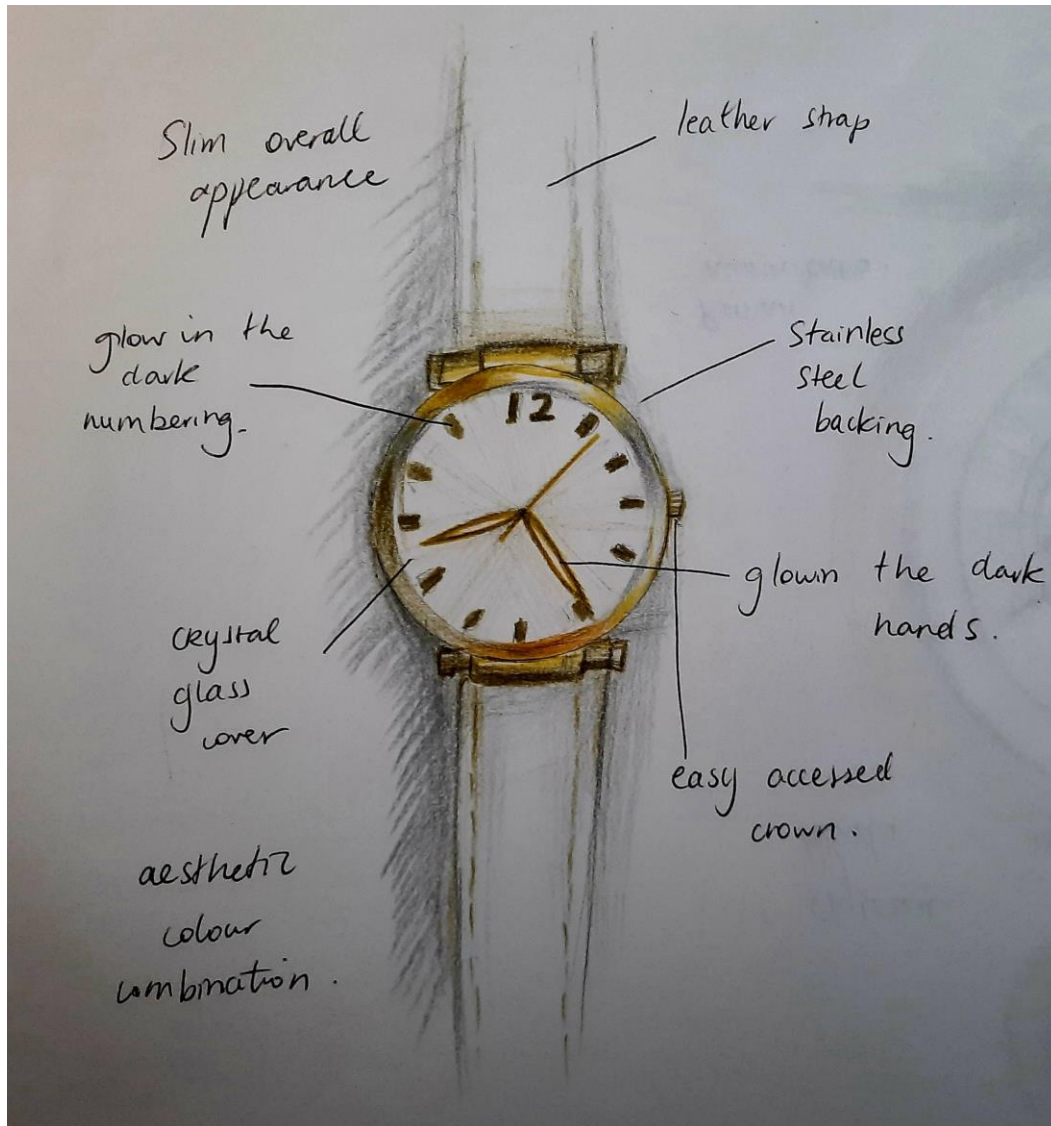
With the upsurge in technology in the 19th century, manufacturers were also able to develop their own systems for duplicating tools and machinery. Mass production blossomed in the United States and cheaper materials meant that pocket watches were made available to ordinary people for the first time. This increased production also called for a change in how pocket watches were wound. From around 1860 onwards, key winding was replaced by keyless winding. This meant that the pocket watch was wound by turning the crown rather than a metal key which was easily broken or lost.

The first wristwatch was created in 1812, to fit the wrist of the Queen of Naples, however, they were previously introduced but called “arm watches”. During this period wristwatches were primarily worn by women as they were prone to damage by the elements and were seen as a type of feminine bracelet jewellery, which is why men continued to use pocket watches. It was only during World War 1 that they became more popular for men in the military. In the first World War, pocket watches were inefficient to the needs of the soldiers who needed to be able to manoeuvre fluidly without the need to pull out loose equipment. To keep their hands free, they were given wristwatches called “trench watches.” These early wristwatches were made with pocket watch movements and some brands started to put the crown at 12 o’clock while others moved it to 3 o’clock. They were worn on leather straps and allowed for accurate coordination of manoeuvres and attacks. Wristwatches became mandatory as part of military requirements. Because men were to purchase their own watches, there were many adverts seen all over which helped popularize wristwatches for all genders.

Electric watches were then introduced in the 1950s. The hands moved mechanically yet the balance wheel was powered by a thin wire wrapped around a metallic core producing a magnetic field when an electric current is passed through. These electric watches foreshadowed the quartz watch, introduced in 1969. The quartz watch removed all moving parts found in mechanical watches, replacing them with a battery. This meant that the watches became more shock absorbent and could maintain better accuracy with no cleaning or oiling. These quartz watches were driven by a battery-powered circuit rather than a self-winding movement. They used digital counters rather than a wheel train to add up beats to track the time, which is still found in quartz watches today. The introduction of quartz watches meant the near extinction of mechanical watches. However, there seems to be a revival of interest in handmade mechanical watches and vintage models in recent years. A continued fascination holds for these particular jewellery pieces.

The modern watch is particularly well designed. A quality watch is at least made of Stainless Steel backing. Stainless-steel compared to ‘normal’ steel can not be affected by moisture and perspiration and prevents skin irritation. Furthermore, a PVD coating is important to ensure that a gold, rose gold, silver or black watch reserves its colour. A watch without a coating may

discolour within a year by frequent use. The lightweight material also makes it suitable for comfort around the wrist.



The glass casing of a quality watch is made of sapphire glass, which maintains clear and scratch-free after frequent use. Most watches use crystal glass or mineral glass will suffice for an average watch. A good, affordable watch has a quartz movement or a certified mechanical movement (COSC). A major advantage of quartz is that there are fewer moving parts required. This makes watches more accurate and affordable. Some watches are waterproof which is a good feature to have to ensure that they last longer. The strap of the watch is also important. Leather wristbands provide more comfort but are subjected to wear and tear over the years. A chain-link band ensures the durability of a watch but may not be as comfortable. Some watches have features such as a date indicator, glow in the dark hands or Roman numeral numbering. The modern watch has a sleek and aesthetic appearance mostly rounded and slim in appearance.

The mobile phone has been around for only a few decades, however, the technology behind the phone is the most advanced. My phone is a Meizu M3s model which contains multiple features. It has a slim appearance which is extremely efficient in portability and fits in the hand comfortably. The oval home key contains a fingerprint sensor which allows maximum protection and security. A SIM card box at the side of the phone is cleverly concealed and only revealed when a pin is inserted in the small hole beside the outline. Volume and power keys at the right side of the phone ensured easy accessibility. The simplicity of the limitation of buttons and functions ensures ease of access and does not overcomplicate things for the device user. At the top of the phone, is a small camera and the back also features a larger camera which allows users to take pictures from both sides with ease. A built-in flashlight is placed below the back camera which is efficient for illuminating images in the dark. The volume speakers are a series of holes at the bottom of the phone along with a small rectangular opening for the phone charger. The top contains a circular hole for earphones. The design of the phone is very simplistic overall. A simple rectangular sheet of metal and plastic. However, it manages to serve many multiple purposes in our daily lives. A feature of the phone I believe that could be incorporated is a removable screen cover. Since phones are primarily transported by the hand and loosely in pockets, the threat of screen shattering is very high. The cost of replacing a broken screen is also quite expensive and laborious so my suggestion is to provide a self-replacing screen. If the screen is damaged, the plastic cover could be easily removed and replaced. Or another suggestion is to make more durable screens.

