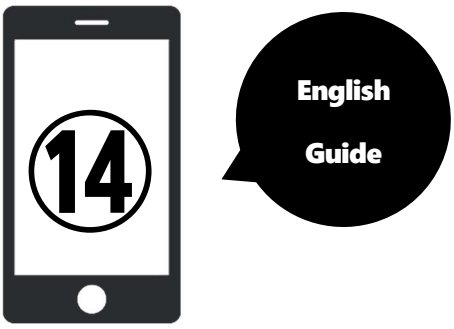

This is the Kawasaki Steel Corporation Chiba Works #1 Blast Furnace (1:10 scale model). The real height is 32.45m and the volume inside is 877 cubic meter. You can imagine how big it is with seeing the dolls on it. Blast Furnace is the machine which extracts iron from iron ore. The orange line going into 2 green pots stands pig iron. The one which goes into the brown elliptic pot is slag (the remainder of the iron ore after it has been extracted from it. It is rich in vitreous substances.). In Japanese it's called YOUSAI melted waste. Kawasaki Steel Corporation Chiba Works was established in 1951, and the first firing of the #1 blast furnace took place on June 17, 1953. To gather the cutting-edge technology at that time, the body of blast furnace is standing without any support. Japan bought a blue print from Germany. On the other hand, the upper part of blast furnace is American style. 4 pipes standing on top gather high heated discharged gas and lead it to the bottom. After that the heat was reused. Raw materials will be lifted up followed by the green steel framework and will be dropped from the top into the furnace. Please go down spiral staircase. If you look at the hole on top of furnace you may see cone shaped equipment. This is the American style. When you drop the raw materials, it will hit the wall of the cone so that materials will spread evenly. With checking a vertical section, you may notice raw materials make layers. The reddish brown part is sinter. Sinter is a mixture of powdered iron ore and limestone that is baked and made into a lump. The black part stands for coke, baked and steamed coal. Iron contained in iron ore is iron oxide. A blast furnace is a device that efficiently reduces and dissolves iron ore. Coke is burned by hot air blown from below. Carbon monoxide and hydrogen generated by the combustion reduces iron. Iron is melted by heat generated by chemical reactions. Iron oxide is reduced and accumulates as pig iron in the orange region below the cross section model. Iron ore other than pig iron reacts with limestone and produces Easy-to-handle slag. The slag floats and separates on the pig iron. Look at the figure of the explanation board. Melted pig iron will flow from the hole to the pot and will be delivered to steel making converter. Floating slag is taken out from the hole. It is necessary to keep the temperature of the blast furnace above 2000 degrees Celsius. Therefore, it continues to run for 24 hours, in shifts of 8 hours. If you look closely, you may find green thin pipes on an outer wall. These pipes goes from the bottom to the top was also considered as a high technology at that time. Check the right side vertical section model so that you can find boxes on the body of furnace. There are cooling devices. With running the cold water inside the green pipes, it will prevent from Refractory brick ageing and collapsing the body of furnace. In 1950s the average life span of furnace was about 12 years but this blast furnace run 24 years until it stopped running in 1977. They produces 9.75 million tons steel. Next let's think about the historical meaning of this blast furnace.