



Unit 17 Blast furnace

Task 08

Announcer: Now listen to the second part of the guided tour.

Mr Huber: So, let's talk about what happens inside the blast furnace and its four different heating zones:

Hot air up to 1250°C is blown in, and burns the coke. At the same time a hot gas develops, and the temperature is increased by blowing in oil, while the gas rises as a blast to the furnace top.

There are 4 different zones:

First of all, the **preheating zone** where humidity, sulphur and carbon dioxide are expelled. The temperature varies from 200–600°C.

Then there is the **reduction zone**, where the remaining iron oxide sinks into the space created by the burning of the coke. The hot rising gas extracts oxygen from the coke as well as the ore. Here, the temperature varies from 600–1000°C.

In the **coking zone** the released iron takes in carbon, therefore the melting temperature decreases. The temperature is about 1000–1100°C.

Lastly, the **melting zone** where finally the ore melts at a temperature of 1500–1600°C.

At the base of the blast furnace carbon monoxide, which consists of coke and oxygen, oxidises to carbon dioxide by extracting the oxygen from the iron oxide, the ore, which thereby is reduced chemically to iron.