

Lesson 8 - Teacher's notes

- ✓ The students must have the handouts with the power point presentation in front of them in order to take notes on them. The power point file is *L8.Copper*
- ✓ Some samples of copper can be brought to the classroom with typical uses electrical wiring, gas and hot water pipe (a piece of it)

Vocabulary

Words

Electrical wiring, plumbing, heating, roofing, machinery, native metal, recycling rate, grinding, enrich, gangue, roast, smelting (notice differences of melt, smelt, molten, melting point), blister copper, corrode (corrosion), brass, tin, bronze, cast bronze, gear, axis

Structures

Easy to smelt, crushed into powder, it improves the mechanical properties, resistant to corrosion

Task 1

Statement	T/F
Copper is more abundant than iron in earth's crust	F
Copper resources throughout the world are very scarce	F
Copper corrodes in contact with humidity forming a green layer (carbonate)	T
A mine of copper is worked when there are 5 kg of copper per tonne of rock	T
In can not be found in the nature as a native metal	F
It was used by mankind after the iron age	F
Copper recycling rate is very low	F
Copper ores have usually less than 1% of copper	T
Copper is soft and easy to smelt	T

Task 2

Grinding the ore means that

The ore is crushed into powder

Through the electrolysis

The copper is purified to 99.99%

Sulphurs are removed

When the ore is heated (roasting)

The unwanted material from the ore is called

Gangue

The raw material is melt

When it is heated to 1200°C

Concentrating means that

The gangue is removed and therefore the ore is enriched

In the furnace

Blister copper forms

Blister copper

Is almost pure copper

Task 3

Roofing, plumbing, electric wiring, coins, machinery, electronics (printed circuit)

Task 4

Alloy, zinc, yellow, brittle, bronze, copper, tin, zinc, mechanical, corrosion, nickel, beryl