

THE MATTER OF METAL

When two or more metals are mixed together, they form an *alloy*. Different mixtures of metals have different properties (e.g. colour, hardness, or strength). This makes them very useful and explains why alloys are everywhere...

50p coins are made
of *cupronickel*



25%
NICKEL

75%
COPPER

Most tableware is
made from
stainless steel



10%
CHROMIUM

90%
IRON

Today, alloys can be precisely designed. Steel train tracks, for example, need to be made from a very specific high quality alloy because they need to last a long time, be very strong, but also be flexible. Just 0.6% carbon and tiny amounts of manganese, silicon, sulphur, phosphorous and aluminium are added to iron to make the perfect rail.



In prehistory, the process of alloying was not always so deliberate. People probably began to mix different metals to play with their appearance. Bronze, the most famous ancient alloy, is produced by adding tin (or its mineral form *cassiterite*) to copper. It not only has a characteristic golden colour, but also makes copper harder and easier to cast into objects. No wonder it became so popular!