

Lead is element number 82. It is very heavy, but not as heavy as gold. Lead plumbing pipes from the Roman empire are still in use. In fact the word "plumbing" comes from "plumbum", the Latin name for lead which also give it its symbol, Pb. Exposure to lead will give you lead poisoning. Drinking water from lead containers and lead pipes with prolonged exposure will cause health problems.

Lead used to be used in pencils because it was soft, grey and easy to use. Children who put the pencils in their mouths were exposed to high levels of lead, so they changed the material to graphite, which is just carbon, a safer material. Lead was also included in old paint. This was a problem when the paint flaked off window sills. Children would often sit by the window and eat the paint flakes, again getting lead poisoning. Lead is no longer allowed in paint. Lead is used for many things. It is sometimes put in gasoline to make engines run more smoothly. The problem is that when you burn the gas, it produces lead pollution from the exhaust pipe. It was used for casting type when printing using a printing press. The letters were easy to melt and cast into new forms. Lead type is made from an alloy that contains about 15-17% antimony and a few percent of tin, sometimes a bit of copper. The main function of the antimony is to make the alloy remain exactly the

same size when it freezes. Most substances including most metals shrink slightly when they solidify, but antimony expands, and when just the right amount is mixed with lead, you get an alloy that neither shrinks nor expands. This is important for forming crisp, accurate copies of the letter molds. Pure lead would also be too soft to do much printing with, and the antimony, tin and copper harden it significantly.

Lead was often used whenever heavy weights were required. Divers used lead weights to help them sink during deep dives in the ocean. You can still buy lead weights for fishing lines to help bait sink in the water when fishing with a rod and reel.

Environmental concerns have prompted a switch from lead to other metals for fishing sinkers, but lead ones are still widely available.

Finally, lead is used to block radiation from things such as X-Ray machines. When you get an X-Ray at the dentist, a lead shield is placed over the parts of your body that will not get X-Rayed. The operator leaves the room to avoid exposure. You can safely get several X-Rays each year, but the lead shield reduces your exposure.