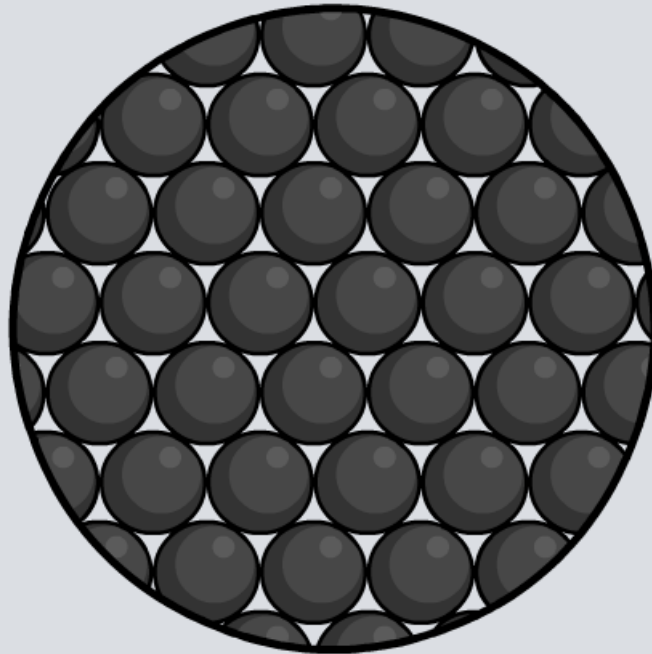


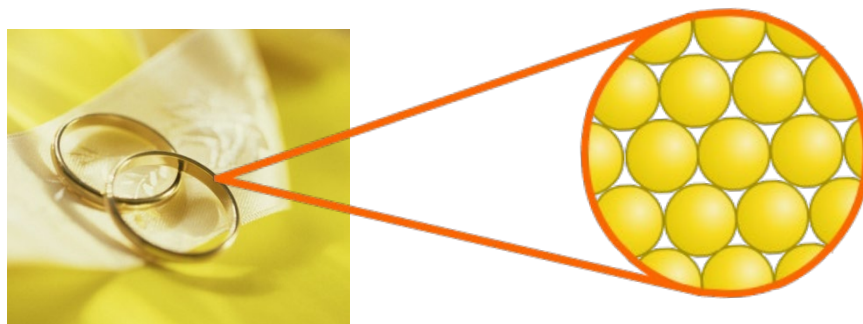
## Introducing Atoms



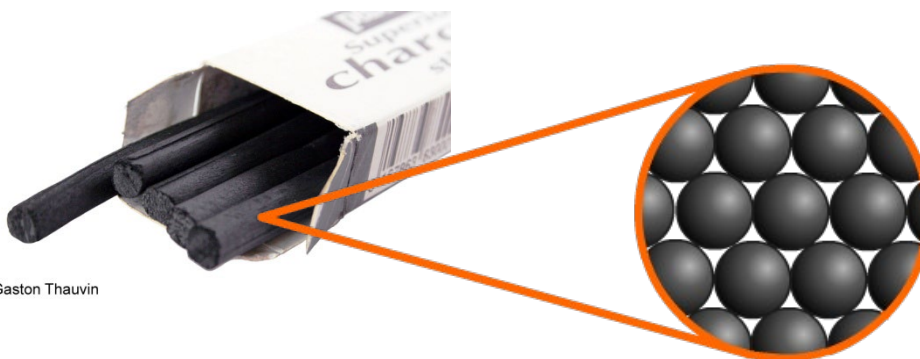
# Elements – different types of atoms

Elements are the simplest substances. There are about 100 different elements.

Each element is made up of very tiny particles called **atoms**. However, each element is made up of just one particular type of atom, which is different to the atoms in any other element.



**Gold** is an element made up of only **gold atoms**.



**Carbon** is an element made up of only **carbon atoms**.

Gaston Thauvin

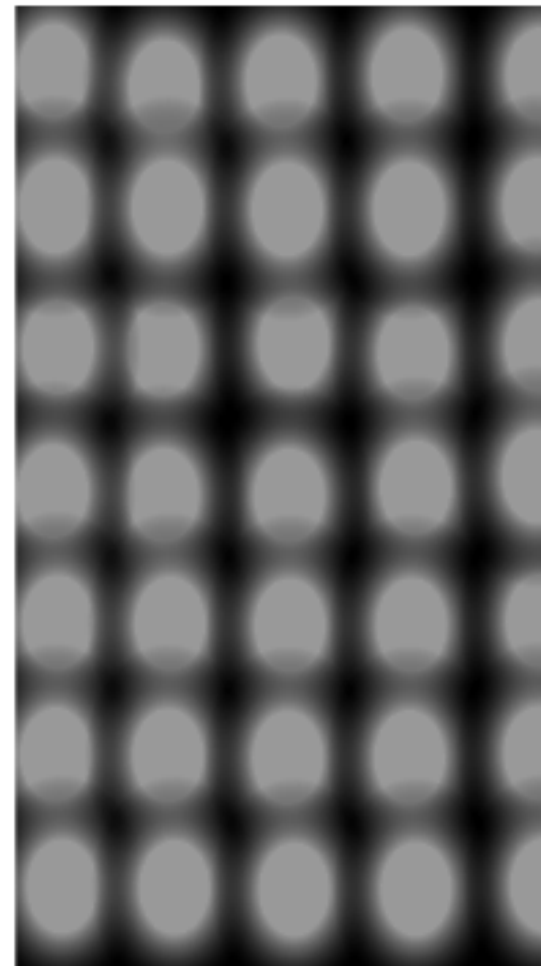
# Atoms – the building blocks

John Dalton had the first ideas about the existence of atoms over 200 years ago.

However, it is only relatively recently that special microscopes (called electron microscopes) have been invented that can actually 'see' atoms.

Electron microscopes produce images similar to this one. What could it be showing?

The gray blobs are individual lead atoms.



# How small is an atom?

Atoms are very small – they are about 0.00000001 cm wide.

Think about the thickness of a potato chip.

The number of atoms you would need to stack up to make the thickness of a chip, is approximately the same number of chips you would need to stack up to make the height of Mount Everest!

That's roughly 7 million potato chips!



## The Amazing Atomic Zoom

**diamond** 1cm

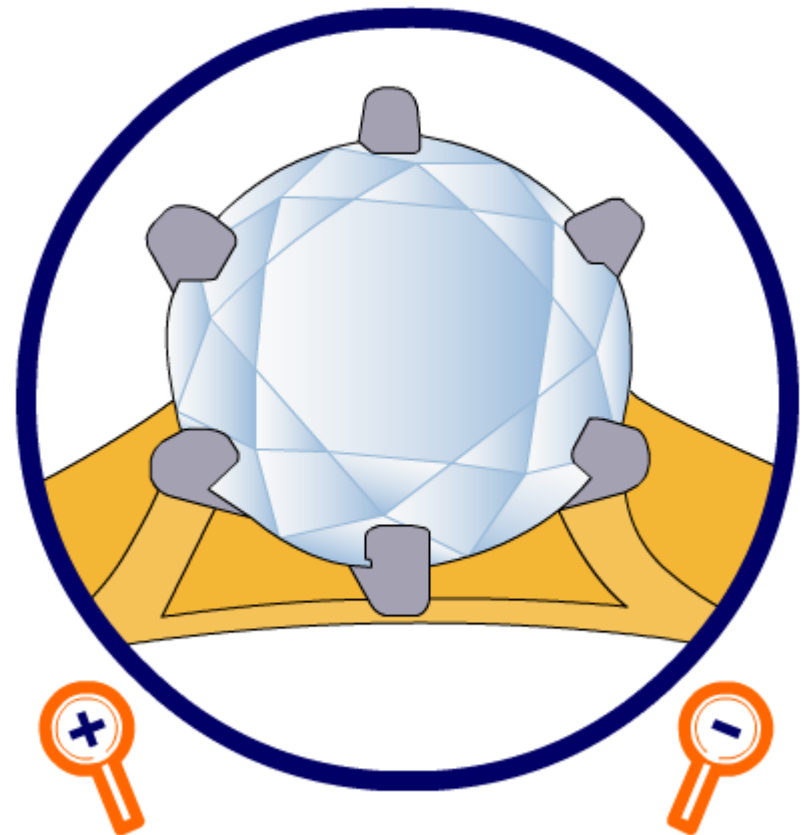
**atoms**

**lattice**

**one atom**

**nucleus**

Diamond is made of carbon – the same element as the graphite in pencils.



# How was atomic structure discovered?

