John Dalton (1766–1844)

He was the son of an English weaver from Eaglesfield in Cumbria. When he wasn't carrying out investigations, he was probably teaching at the Presbyterian college in Manchester.

In 1807, John Dalton was the first person to use the word atom to describe the smallest particle of any element.

What did Dalton do?

Dalton studied gases and discovered that elements combine with other elements to make compounds. He had to guess how many atoms joined together to make the compound. He was able to calculate the relative weights of particles using data from his own observations and measurements. Individual particles were too small to weigh.

Dalton's atomic theory of matter, 1807

1. All matter is made up of tiny particles called atoms.

2. Each atom is a solid particle with no spaces, surrounded by an atmosphere of heat.

3. Atoms cannot be made or destroyed.

4. Atoms of the same elements are alike with the same mass, colour etc.

5. Atoms of different elements have different masses, colours etc.

6. Atoms can join to form larger particles in compounds.

Things to do

1. Make a model or draw a diagram of Dalton‘s atom.

2. How was Dalton able to calculate the weight of particles?

3. Using Dalton’s symbols, write down the formulae of water H_2O and carbon dioxide CO_2.