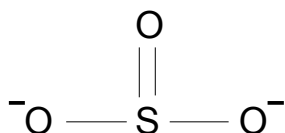


Chemguide – questions

SHAPES OF MOLECULES AND IONS (including double bonds)

You may need a copy of the Periodic Table.

1. Carbon dioxide and sulphur dioxide have similar formulae, but different shapes. Sketch the shapes of both molecules, and explain the reason for the difference.
2. Methanal (old name formaldehyde) has the formula HCHO. The carbon atom has two hydrogen atoms attached to it with single bonds and an oxygen with a double bond. Work out the shape of the molecule.
3. a) Sulphur trioxide, SO₃, has three oxygen atoms attached to the sulphur with double bonds. Work out the shape of the molecule.
b) The sulphite ion, SO₃²⁻, has the atoms joined up as in the diagram. The diagram does *not* show the correct shape of the ion.



Work out the shape of the sulphite ion.