

## Word List

Define:

Stereoisomers

Enantiomers

Chiral centre

Racemic mixture

Optical isomer

## Chirality in Molecules

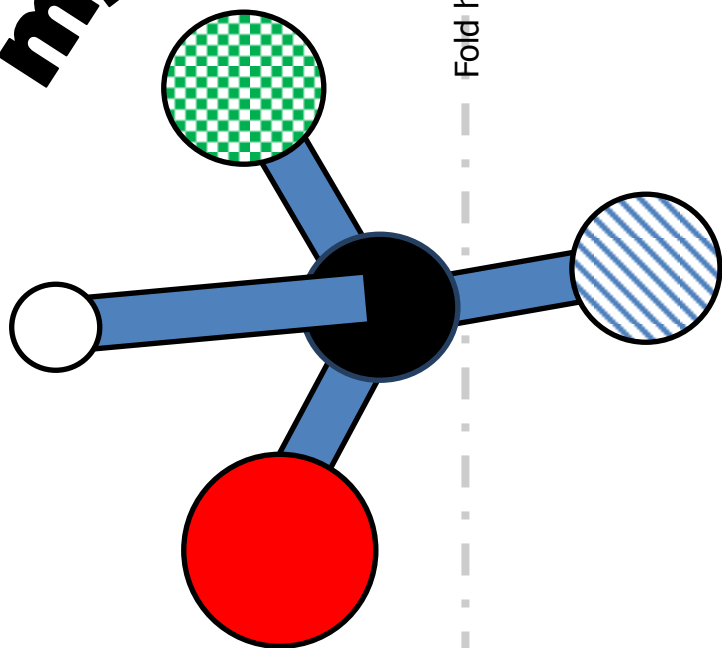
In organic chemistry, the property known as chirality in a molecule occurs only when there are four different atoms or functional groups attached to a central carbon atom.

Two stereoisomers are possible from this arrangement resulting in a pair of enantiomers which are mirror images of each other. Just like a pair of gloves, they are alike but not identical. This left and right-handedness gives rise to these optical isomers having different properties. A mixture containing equal amounts of both is called a racemate.

## Investigate

How does chirality affect formulations in pharmaceutical preparations e.g. thalidomide and ibuprofen?

**mirror**



Fold here

Here are mirror images of  
Bromochlorofluoromethane

CBrClFH

Cut both molecules out carefully and gently crease the bonds from the black chiral centre to form a tetrahedron. They have identical chemical formulae but can they be superimposed?

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**mirror**

