Hydrogen bonds
Finding out more

Hydrogen bonds are present in many different materials, many of which are used on a daily basis.

1. You are going to work in a group to research information about **one** material that contains hydrogen bonds in its structure.

   Materials to choose from

   DNA
   Kevlar
   Polyethenol
   Collagen
   Nylon 6,6
   Hydrogen fluoride
   Water

2. Your group must make a presentation about your material. Include as much of the following information as possible.

- The 'everyday' name of the material
- Any formal IUPAC name for the material
- A representative full structural formula for the material, and/or its monomers
- A simple molecular formula for the material
- A structure showing where hydrogen bonds are found in the material – molecular models may help for some materials
- The value of the bond dissociation enthalpy for the hydrogen bonds in the material
- The value of bond dissociation enthalpies for other intermolecular bonds
- Information about the melting and boiling points of the material
- Any other physical data, *eg* glass transition temperature, relative molecular mass, solubility in water
- Chemical data, *eg* how the material is made, what chemical properties it has
- What the substance is used for
- A picture of the material or of the material in use
- How the chemical and physical data make the substance suitable for its uses
- How the presence of hydrogen bonds in the substance help make it suitable for its uses.

3. Agree with your class criteria on which to assess the presentations.

4. Write about 200 words to show your understanding about hydrogen bonds.