Lesson 12: Building the Periodic Table

Teachers' notes

This lesson is designed to allow pupils to discover how earlier scientists pieced together the periodic table. By looking for patterns both in the properties and the electron structure of the elements they should start to appreciate why the elements are so placed.

The lesson can be made as simple or challenging as the teacher feels is appropriate for the group being taught. Less able groups will need more teacher input, or could have a modified task (such as using fewer property/orbital cards). The 'key' document links the property and orbital cards to the elements (note that the letters and numbers are random – this should be pointed out to pupils who may otherwise try to group according to letter/number rather than property!) For high ability pupils there are also orbitals for the first row of transition metals to allow a fuller treatment of shell structure.

Begin the lesson using the PowerPoint which depicts some scientists involved in the production of the periodic table and the development of models of atomic structure. The main activities are card based; these require the pupils to collate evidence in order. Blu-tac and A3 paper may be given so that pupils can present their groupings to the class if desired.

After the plenary/homework all pupils should have some idea of how the periodic table was put together, with a simple table in their exercise books.

More information about the scientists mentioned in the PowerPoint can be found at:

http://chemsoc.org/networks/learnnet/periodictable/scientists/home.htm.

Further student resources on the Periodic table are available at http://www.webelements.com/webelement/scholar