

TOPIC 2.12:	Atoms (Learning outcomes by syllabus reference: first part OC39)
HOW MANY LESSONS?	1 – 2 lessons

KEYWORDS / TERMS TO BE TAUGHT			
Atom	Element	Compound	Molecule
Positive	Negative	Orbit	Proton
Neutron	Electron	Neutral	a.m.u.

KEY CONCEPTS IN THE LESSON (OBJECTIVES)		
<i>What students must know or be able to do</i>	<i>What students should know or be able to do</i>	<i>What students could know or be able to do</i>
To be able to locate protons, neutrons and electrons on a diagram of an atom	To be able to draw the structure of the atom	To be able to describe the structure of the atom

SEQUENCE OF LESSON
<p>1. Introduce the concept of atoms. Allow students to relate personal knowledge of atoms (e.g. atomic bomb). This could be facilitated by using the <i>Atoms Introduction</i> PowerPoint and encouraging student input during the presentation.</p> <p>2. Discuss key vocabulary.</p> <p>3. Review – whole class discussion. Possibility of using the <i>What am I?</i> activity in the <i>Classroom Activities</i> section of this resource pack, to facilitate student understanding.</p> <p>4. Further class work/homework – see <i>Atoms Worksheet</i>.</p>

1. DIFFERENTIATE BY CONTENT (In what ways can I vary the content of what I am teaching?)		
<i>(A) Complexity of content: (concrete, symbolic, abstract)</i>		
<i>Concrete</i>	<i>Symbolic</i>	<i>Abstract</i>

Real materials associated with elements (e.g. copper, iron, gold, silver etc)	Diagrams of atoms	Mass, charge and location of sub-atomic particles
<i>(B) Variety of resources</i>		
As listed above.		
<i>(C) Variety of learning environments</i>		
Classroom, school laboratory, computer room		

2. DIFFERENTIATE BY PROCESS (How will I teach the lesson?)

Sequence of lesson as laid out above

- Introduction – using concrete or symbolic material, or a general class discussion
- Divide class into groups. Assist students to complete the worksheet as required.
- Possible use of *What am I?* activity to facilitate discussion.

3. DIFFERENTIATE BY OUTCOME / PRODUCT (How will the student demonstrate understanding?)

See *Worksheets*, *Classroom Activities* and *Experiments* sections of this resource pack.

- Students may draw a diagram of an atom in their copies.
- Whole class review work completed at end of class
- Homework: *Atoms Worksheet* if not used for class work. Specify time to be allocated to this work at home.

FINALLY - ANY OTHER POSSIBILITIES FOR THIS LESSON?

- Common elements in everyday life
- Collage of scenes showing elements and the atoms that make them up
- Role play using students as individual sub-atomic particles
- Extension exercise: How do atoms become chemically combined to form a compound?
- Internet search for material on atoms
- Suggested Internet links include www.juniorscience.ie, www.bbc.co.uk/schools, www.scoilnet.ie, www.skool.ie and <http://classroom.jc-schools.net/sci-units/matter.htm>
- For advice on enhancing curricular access through the use of mobile ICT, see www.laptopsinitiative.ie