

TOPIC 2.9:	Mixtures & Compounds (Learning outcomes by syllabus reference: part OC3, OC12)
HOW MANY LESSONS?	3 – 4 lessons

KEYWORDS / TERMS TO BE TAUGHT			
Atom	Element	Compound	Molecule
Mixture	Hydrogen	Oxygen	Carbon
Magnesium	Iron	Sulfur	

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 give examples of mixtures and compounds	To be able to identify the properties of compounds and their constituent elements	To be able to list all four differences between mixtures and compounds

SEQUENCE OF LESSON
<p>1. Introduce the concept of mixtures and compounds. Allow students to relate personal experiences of mixtures. This could be facilitated by using the <i>Mixtures & Compounds Introduction</i> PowerPoint and encouraging student input during the presentation.</p> <p>2. Carry out experimental activities (compare iron sulphur mixture with the compound iron sulphide) in groups. Focus on safety. Discussion of key vocabulary, risks and safety rules</p> <p>3. Review – whole class discussion. Possibility of using <i>Definition Game</i> in <i>Classroom Activities</i> section of this resource pack to facilitate student understanding</p> <p>4. Further class work/ homework – see <i>Mixtures and Compounds Worksheet</i></p>

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

<i>Concrete</i>	<i>Symbolic</i>	<i>Abstract</i>
Real materials associated with mixtures and compounds (e.g. sea water, air, iron, sulfur, iron sulfide)	Molecules of water, carbon dioxide, iron sulphide and magnesium oxide	Differences between mixtures and compounds
<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 material or a general class discussion
- Closely observe students as they perform the experiment. For resources, guidance and support related to facilitating student experiments and investigations, see www.juniorscience.ie
- Possible use of *Definition Game* 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 molecules representing the compounds water, carbon dioxide, iron sulphide and magnesium oxide in their copies with short descriptions of their properties.
- Offer students a choice of learning activities. Students may design a poster, write a poem/song or create a radio documentary on tape describing the difference between properties of compounds and the elements that make them.
- Whole class review work completed at end of class
- Homework: *Mixtures and Compounds 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 mixtures and compounds in everyday life
- Collage of scenes showing mixtures and compounds
- Role play using students as individual elements in mixtures and compounds
- Extension exercise: How do the elements that make up a compound become chemically combined?
- Internet search for material on mixtures and compounds
- 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