TOPIC 2.6:	**Cells** (Learning outcomes by syllabus reference: OB42 and OB43)
HOW MANY LESSONS?	4 – 5 lessons

KEYWORDS / TERMS TO BE TAUGHT			
Cell	Microscope	Focus	Lens
Magnify	Image	Slide	Cover slip
Iodine	Cell membrane	Nucleus	Chloroplast
Cell wall	Vacuole	Cytoplasm	

KEY CONCEPTS IN THE LESSON (OBJECTIVES)		
*What students **must** know or be able to do*	*What students **should** know or be able to do*	*What students **could** know or be able to do*
To be able to identify the main parts of a microscope To be able to identify the main parts of a cell	To be able to draw and label plant cells and animal cells To be able to identify the function of each part	To be able to *compare* and *contrast* animal cells and plant cells

SEQUENCE OF LESSON

1. Introduce the concept of cells as building blocks. Seek level of prior knowledge of class. This could be facilitated by using the *Cells Introduction* PowerPoint.
2. Carry out experiments in groups to look at cells using a microscope. Discussion of key vocabulary, results and conclusions
3. Students record results and write up experiment as they are doing the practical work using text and/or pictures.
4. Review – whole class discussion
5. Further class work/ homework – see *Cells Worksheet*.

1. DIFFERENTIATE BY CONTENT (In what ways can I vary the content of what I am teaching?)		
(A) Complexity of content: (concrete, symbolic, abstract)		
Concrete	*Symbolic*	*Abstract*
Real materials associated with cells and observing cells, e.g. slides and a microscope	Images of cells	The way cells act as building blocks in multicellular organisms
(B) Variety of resources		
As listed above. Also potential use of the Internet and/or school or community library for further exploration of material related to cells.		
(C) Variety of learning environments		
Classroom, school laboratory, computer room/library in school.		

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 ➢ Teacher may demonstrate use of apparatus to the class, emphasising safety. For resources, guidance and support related to facilitating student experiments and investigations, see **www.juniorscience.ie** ➢ Divide class into groups. Assist the students, as required, to plan, carry out the experiment, record results and draw conclusions as appropriate. Enable students extend their thinking and language use. ➢ Possible use of *Levels of Thinking* information sheet located in the *Toolkit* section of this resource pack to create questions that promote higher-level thinking and facilitate student understanding

3. DIFFERENTIATE BY OUTCOME / PRODUCT **(How will the student demonstrate understanding?)**
See *Worksheets*, *Classroom Activities* and *Experiments* sections of this resource pack. • Students may use a template from the *Experiments* section to assist them with the write-up. • Whole class review work completed at end of class. • Homework: *Cells Worksheet* if not used for class work. Specify time to be allocated to this work at home.

FINALLY - ANY OTHER POSSIBILITIES FOR THIS LESSON?
• Collage of scenes showing cells • Dramatisation, e.g. possible use of role play to highlight the function of each part of a plant cell • Other activities, e.g. a poster comparing plant cells with animal cells • Internet search for material on cells • Suggested Internet links include www.bbc.co.uk/schools, **www.scoilnet.ie**, **www.juniorscience.ie**, **www.skoool.ie** and **http://classroom.jc-schools.net/sci-units/cells.htm** • For advice on enhancing curricular access through the use of mobile ICT, see **www.laptopsinitiative.ie**