Lesson Plan Summary Unit 1

Notes

- Because we only have two lessons per week in the Lab., your teacher may need to mix the lessons from weeks 1 and 2 and weeks 4 and 5.

Lesson Plans. Week 1

No.	Cor L	Lesson Outline
1	C	Introduction, set up of computers, rules and course explanation Reflective Journal
2	Either	Brainstorming; How do you tell of Something is alive? • Work in pairs to make a list of the characteristics of Living Things. This can be done on paper or using the word processor on your laptop. • Compare notes and discuss • Then access this **XSIQ material** from the **Middle School Biology** Section **Characteristics of living things** **Living things** (1) Introduction (2) The characteristics of living things (3) All living things are made of cells • Have students do the activity in the introduction, compare their list with the one in the characteristics of living things and if time look at 3 (it's only one page) and tell them we will look at cells in more detail soon. Homework. • Reflect on what you learnt in science today in your Journal.
3 and 4	**C**	**Return to XSIQ material and work through these sections** **The features of life** (1) Growth (2) Movement (3) Reacting to the environment (4) Respiring (5) Reproduction (6) Reproduction in bacteria (7) Sexual reproduction (8) Excretion (9) Nutrition (10) Do cars live? (11) Do viruses live? (12) The word finder challenge (13) Summary - The characteristics of living things Homework. Create a Glossary of Terms of your own using your own words.

Lesson Plans. Week 2

No.	Cor L	Lesson Outline
1	L	Show students the two objects (stone, seed) Ask which is dead and which is alive. Ask students how to design an experiment to answer this question. (at this stage it's probably better to guide the discussion and do it as a whole class) Having agreed on an approach, ask students to work in bench groups to set the experiment up. Homework: Reflective Journal Add any new words to your glossary.

2	L	• Allow students to come in, and view their experiments for five minutes
		• Return to seats and settle
		• Explain lesson aims
		• Access http://webs.somerville.qld.edu.au/yr7/Science/lal/is_it_alive.xls and record results/observations in spreadsheet.
		• Allow students to photograph and download photos using the Middle School camera. (will cover in in-service)
		• Demonstrate use of Excel if students not competent
		• Homework
		  ○ Reflective Journal
		  ○ Quiz on features of living things in the on-line activities section of the Life and Living web pages

3	L or C	Write up lesson This lesson will not necessarily occur immediately after the first two

Lesson Plans. Week 3

No.	Cor L	Lesson Outline
1	**L**	**Introduction of topic including instructions on how to carry the microscopes.** • Students use laptops to view instructions for using the light microscope (both XSIQ & Sally Mack's as they are complementary.) • **Looking at cells (XSIQ)** (1) Introduction (2) Instruments used to view organisms (3) Cells (4) Parts of a light microscope • Get microscopes from boxes and trolley& set them up. • Use them to view the grids and letters photocopied onto OHT's. • Ask students what happens o To the letters when they look at them under the microscope o To the grid as they increase the magnification. **Home work** • Reflect in their on-line journal about what they have learned today. • Review XSIQ (5) Magnification (6) How to calculate magnification (7) Field of view (8) Magnifying your field of view • Do XSIQ magnification exercise (10) (determining the size of a magnified object) • For fun. Interactive microscope http://micro.magnet.fsu.edu/primer/virtual/magnifying/index.html • Extension XSIQ (9) exercise (Calculating the diameter of the field of view) • Extension How a magnifying lens works interactive http://micro.magnet.fsu.edu/primer/java/lenses/simplemagnification/index.html
2	**L**	**Looking at microscopic life I.** • Set up microscopes if necessary • Demonstrate to students how to make onion skin slides, and also how to make transverse cuttings of a leaf stalk (celery, or Dizzy Lizzies) and place these on slides. • Use a variety of stains. • Students should record what they see by • Drawing on sheets of paper, o using their mouse and Paint o capturing the image from the teacher microscope with a Flexicam and SAM's capture device /software or the school Olympus Camera. **Homework** • Reflect in their on-line journal about what they have learned today.

3	**L**	**Looking at microscopic life II.** • Show students how to place a drop of pond water on a slide, add a cover slip, and then look at the organisms it contains. • View prepared slides of animal and plant cells Students should record what they see as above **Homework** • Reflect in their on-line journal about what they have learned today.
4	**C**	Consolidation XSIQ **Cell basics** (1) Staining cells (2) Sectioning (3) Unicellular organisms (4) Cilia and flagella (5) Unicellular organisms have to eat too

Lesson Plans. Week 4

No.	Cor L	Lesson Outline
1	**C**	Give students an outline of the activity Direct them to the Molecular Expressions web site. http://micro.magnet.fsu.edu/primer/museum/index.html Ask them to prepare a timeline using Word (I may have time to make a pro-forma for this.)
2	**C**	Research (work in pairs) View the same site, and then choose one historical microscope from one particular period to research further. Choose one that led to improvements of our understanding.
3	**L**	Library research of history of particular microscope chosen
4	**C**	Prepare a PowerPoint or Publisher report or drama about your microscope and how it contributed to our understanding of cells.

Lesson Plans. Week 5

No.	Cor L	Lesson Outline
1	**L**	**Other kinds of microscopes** The stereo microscope Inform students of the reasons to use a stereomicroscope. Demonstrate the correct way to carry and setup the micros cops Examine as many examples as possible. Sketch three favourites on paper or using a mouse in Paint and submit them via Encarta Class Server. Homework Reflections in Journal Go to the molecular Expressions site and have a little play.
2	**C**	**The Electron Microscope** How it works Iowa state University Scanning Electron microscopy Simulation 1 http:// micro.magnet.fsu/primer/java/electronmicroscopy/magnify1/index.html Simulation 2 This is the better one http://www.denniskunkel.com/PublicHtml/Edu-JavaScriptSEM.asp Choose one item to examine from either site, and do a sketch of it at high and low magnification. Screen capture is not permitted. **Homework** • Reflection in Journal • Complete activities not done in class. • Submit election microscope activities.
3	**C**	**Left spare for catch up work.**

Lesson Plans. Week 6

No.	Cor L	Lesson Outline
1	C	**Different kinds of cells** Students should work through the online activities independently. They showed do all the quizzes etc in the XSIQ material • Animal cells • Plant cells and on the online Website
2	C/L	Work independently (in Pairs) to prepare the my cell zoo PowerPoint assignments
3	C/L	Work independently
4	C/L	Work independently
5	C/L	Work independently