

Name:		Form Class:	
Subject:	Senior Chemistry	Date:	See Below
Teacher:		Time Allowed:	3 Weeks
Semester:	4	Year:	2008

Assessment No	7	Assessment Technique	ERT
Topic/s:	To research the chemistry and application of polymers		
Common Curriculum Elements:	<p>Acquire: develop, gain through experience, learn, collect</p> <p>Critically Analyse - Separate or break up a whole into its smaller parts in order to discover/describe them, and their inter-relationship</p> <p>Evaluate - Present an appraisal of the problem stressing the pros, cons, advantages and limitations.</p>		

Instructions & Conditions:

You must:

- You must research some important polymers used in Queensland
- You must research catalysis and the ways in which they work
- You must understand the chemistry of polymer production and emphasize how their physical and chemical properties relate to specific applications
- You must provide specific page reference and actual URL for any web resources used
- You must critically evaluate their properties and application
- Your presentation **must not contain plagiarised material** – this also includes copying large sections of the report from other members in your group.

Your teacher will provide:

- Timely guidance and advice to get (and keep) your ERT moving.
- Suggested World Wide Web (WWW) links (not exhaustive) to useful sites pertaining to your topic.
- Class time to work on the ERT
- Some guidance with multimedia elements
- Criteria to guide your performance

	Due Date	Teacher signature	Date
ERT assigned	12/8		
Checkpoint	19/8		
Draft of report submitted	26/8		
Final report submitted	2/9		

LEVEL OF ACHIEVEMENT

The Research Task:

Unit 7: How we can manipulate molecules?

Relates to the chemistry and application of polymers

Background information:

- Polymers Meaning "many parts," it is a material constructed of smaller molecules of the same substance that form larger molecules. For example, plastic is a synthetic polymer, while protein is a natural polymer.

Phase of ERT	Step to Complete. You should:	Date Due	Complete
<p>Phase One: Research an application</p>	<p>A group of engineers are developing a range of new products. These include;</p> <p>(a) a range of high quality home theatre loudspeakers (b) a range of light weight cookware (these should be dishwasher safe and be capable of withstanding cooking temperatures) (c) Suspension bushes for high performance cars (d) A range of covers designed to protect garden furniture , BBQs etc</p> <p>You have been asked to provide advice on which polymers should be used for one of these applications. Consider both engineering and environmental factors associated with these products before selecting the construction polymer.</p>		
<p>Phase Two: Researching (chemistry of production and catalysis)</p>	<ol style="list-style-type: none"> 1. Research 3 suitable polymers that could suit this application. 2. Use a journal to record your use of time, key URLs etc 3. Make sure that your information is the latest available. 4. Please keep all handwritten notes 		
<p>Phase Three: Research + justify selection</p>	<ol style="list-style-type: none"> 5. Research; <ol style="list-style-type: none"> (a) The chemistry associated with polymer production. (b) Catalysts and the describe how they lower the costs of polymer production.. (c).Detail the production process for <u>one of your chosen polymers</u> .(chemical, environmental and energy requirements) (d).Determine how its physical and chemical properties best suit its use (d).Can the raw polymer be modified in anyway If so outline the chemistry involved 		
<p>Phase Four: Media Presentation</p>	<p>Use your findings to produce a feature article. This article should include the following;</p> <p>The details of a polymer's production and modification A Guide to catalysis Your critical opinions on which polymers are best suited to produce the products listed in Phase 3 Your presentation must not contain plagiarised material-this also includes copying large sections of the report from other members in your group.</p>		

Hints for report writing:

The format of the report required for this task is outlined below. A more detailed breakdown, including examples may be accessed from the following address: <http://unilearning.uow.edu.au/report/2b.html>. Note that there are slight differences in the suggested structures. These are reflective of the intended audience.

Name:	A	B	C	D	E
Aspects of the task				:	:
Developing Quantitative and Qualitative Data	Acquires and reports on qualitative information and compares quantitative data on a range of polymers	Reports on both qualitative and quantitative information to evaluate a chosen polymer	Uses quantitative and qualitative information to consider a polymer	<input type="checkbox"/> Uses quantitative and/or qualitative data.	<input type="checkbox"/> Uses quantitative and/or qualitative data.
Applying	Your research is well reasoned and thoughtful. Chemical concepts, ideas and/or consequences are well explained and accurate. <input type="checkbox"/>	<input type="checkbox"/> Your research is generally well reasoned and thoughtful. The chemistry explained and generally accurate	<input type="checkbox"/> Your research is clearly explained, however some inconsistencies and/or inaccuracies in the chemistry	<input type="checkbox"/> You have included some chemistry. You may have made significant errors	<input type="checkbox"/> The chemical information is too brief or inaccurate.
Investigating	<input type="checkbox"/> Conclusion integrates all salient arguments in a cohesive manner which critically explains and evaluates the application of polymers	Conclusion logically presents all salient arguments in a cohesive manner which details the production and suitability of your chosen polymer <input type="checkbox"/>	<input type="checkbox"/> Conclusion presents all the main ideas relating to the production of your chosen polymer You have included all the key chemistry	<input type="checkbox"/> Conclusion presents some of the main ideas relating to the production of a polymer	Conclusion considers the production of a polymer
Using Techniques Media Presentation	Your media presentation is linked correctly; The content is sequenced with excellent expression including spelling, grammar and scientific terminology. Relevant information has been located from an appropriate range and number of sources. Referencing used appropriately. <input type="checkbox"/>	<input type="checkbox"/> Your presentation is neat, clear and well organised but some errors with spelling and/or grammar and terminology. Mostly relevant information has been located from an appropriate range and number of sources. Referencing used appropriately.	<input type="checkbox"/> Your presentation is almost complete and adequately presented. It shows most components but some aspects are unclear or have errors. Some relevant information has been located from a range and number of sources. Referencing used.	<input type="checkbox"/> Your presentation is presented but significant components omitted or poorly expressed. Some relevant information has been located from a number of sources.	<input type="checkbox"/> A presentation has been attempted but is incomplete and lacks cohesion. Numerous errors. Some information has been located.
Teacher Comments:					
				Date:	Signature: