

VCAA and CEA Implementation Workshops for VCE Chemistry

Term 2 2006



Purpose of the workshop

- Introduce the reaccredited VCE Chemistry Study Design (2007–2011 Units 1 and 2) (2008–2011 Units 3 and 4)
- Highlight differences between the reaccredited study design and the current study design with focus on Units 1 and 2
- Provide some time for discussion
- Provide some sample teaching and learning programs for Units 1 and 2
- Seek feedback as to future professional development and support



Structural changes

- ❑ A set of *Key Skills* applicable to all units
- ❑ Two *Areas of Study* in each unit for Units 1 to 4
- ❑ New assessment tasks
- ❑ Glossary
- ❑ 2 year implementation
Units 1 and 2 2007–2011
Units 3 and 4 2008–2011



Content changes

- Key concepts 'spiral' through each unit
- Choice within some areas of study
- The Periodic Table introduces the study of VCE Chemistry (in Unit 1)
- Rationale, Aims and Introduction to each unit and area of study have been updated
- More detailed regarding safety and allocation of time for laboratory work
- More detailed Advice for teachers



Summary of new content

- Unit 1 – nanotechnology
- Unit 2 – green chemistry
- Unit 3 – additional techniques of analysis, biochemical fuels, forensic analysis, design new medicines
- Unit 4 – waste management and health and safety, choice of industrial chemical, sustainability of energy sources



Assessment

- ❑ Number of examinations
 - One mid-year examination (Unit 3)
 - One end-of-year examination (Unit 4)
- ❑ Contributions to study scores
 - 33% for each examination ($\times 2 = 66\%$)
 - 34% Unit 3 and Unit 4 School-assessed Coursework
- ❑ Time allocated for each examination
 - 90 minutes plus 15 minutes reading time



Key Skills

(p. 12 of study design)

- Apply to each of Units 1–4
- Developed, used and applied in a variety of contexts
- Demonstrate skills at a progressively higher level as the complexity of knowledge increases across Units 1–4
- Examinable in Units 3 and 4



Structure of Units

Unit 1

The big ideas of chemistry

1. The Periodic Table
2. Materials

Unit 2

Environmental chemistry

1. Water
2. The atmosphere

Unit 3

Chemical pathways

1. Chemical analysis
2. Organic chemical pathways

Unit 4

Chemistry at work

1. Industrial chemistry
2. Supplying and using energy



Unit 1:

The big ideas of chemistry

Area of Study 1

The Periodic Table

Outcome 1

Explain how evidence is used to develop or refine chemical ideas and knowledge

Area of Study 2

Materials

Outcome 2

Use models of structure and bonding to explain the properties and applications of materials



Activity 1

Linking key knowledge and key skills



Unit 2:

Environmental chemistry

Area of Study 1

Water

Outcome

Write balanced equations and apply these to qualitative and quantitative investigations of reactions involving acids and bases, the formation of precipitates and gases, and oxidants and reductants

Area of Study 2

The atmosphere

Outcome

Explain how chemical reactions and processes occurring in the atmosphere help to sustain life on earth



Activity 2

Extended experimental investigation



Activity 3

**Examples of summary report
including annotations of three
practical activities**



Other assessment tasks

- Response to stimulus material
- Analysis of first and/or second-hand data using structured questions
- Presentations in:
 - Unit 1 – new material/s or new use/s of an existing material
 - Unit 2 – green chemistry



Support for implementation

- ❑ CD-ROM (DIIRD)
- ❑ Teacher placement in emerging industries
- ❑ Ongoing professional development program such as RACI (Vic), VICS, STAV, CEA



VCAA website – Chemistry study page

www.vcaa.vic.edu.au/vce/studies/chemistry/chemindex.html

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Chemistry

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- [Accreditation period](#)
- [References and Materials](#)
- [Reaccredited Study design - Units 1-2: 2007-2011; Units 3-4: 2008-2011](#)

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Accreditation period

Units 1-2: 2000-2006
The accreditation period for Units 1 and 2 expires 31 December 2006.

Units 3-4: 2000-2007
The accreditation period for Units 3 and 4 has been extended until 31 December 2007.

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References and Materials

- [Curriculum Guidelines](#)
- [Assessment](#)

Applet v51 started

Some useful websites

- www.science.org.au/nova
- www.bio21.com.au/
- www.thescientist.com/
- www.csiro.au/helix/scienceemail/index.html
- www.abc.net.au/science



For further information

- ❑ VCAA website
www.vcaa.vic.edu.au/vce/studies/chemistry/chemindex.html
- ❑ VCAA Bulletins
www.vcaa.vic.edu.au/correspondence/index.html
(Chemistry Summary of Changes article
VCAA Bulletin No.35
March 2006 Supplement 2)
- ❑ CEA website
www.cea.asn.au/vce_home_page.html

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