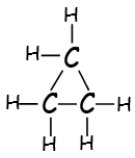
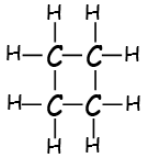
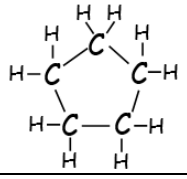
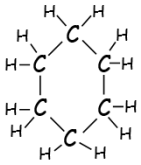
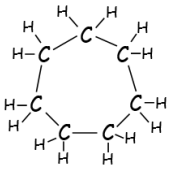
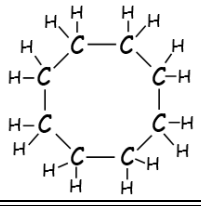
National 5 Chemistry
Unit 2.1d Cycloalkanes

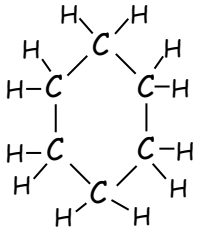
		Lesson	Traffic Light		
			Red	Amber	Green
16	Cycloalkanes: • are a homologous series of saturated, cyclic hydrocarbons • are used as fuels and solvents • are insoluble in water can be represented by the general formula C_nH_{2n}		☹	😐	☺
17 18	Cycloalkanes have the following structure: cyclopropane C_3H_6  cyclobutane C_4H_8  cyclopentane C_5H_{10}  cyclohexane C_6H_{12}  cycloheptane C_7H_{14}  cyclooctane C_8H_{16} 		☹	😐	☺

Past Paper Question Bank
Unit 2.1d Cycloalkanes

Nat5
Traffic Lights

JABchem

Outcome	Original Specimen Paper	New Specimen Paper	Nat5 2014	Nat5 2015	Nat5 2016	Nat5 2017	Nat5 2018	Nat5 2019	Nat5 2020	Nat5 2021						
16	mc9	mc9														
17 18			mc9													

Nat5	Answer	% Correct	Reasoning
2014 MC 9	C	87	Cyclohexane is a 6 carbon cycloalkane with a ring of carbons inside it 

Nat5	Answer	Reasoning
	No Long questions	

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Unit 2.1d Cycloalkanes

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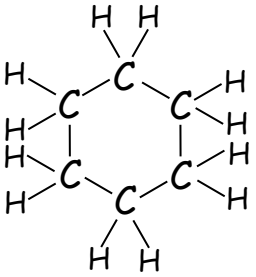
Outcome	Int2 2000	Int2 2001	Int2 2002	Int2 2003	Int2 2004	Int2 2005	Int2 2006	Int2 2007	Int2 2008	Int2 2009	Int2 2010	Int2 2011	Int2 2012	Int2 2013	Int2 2014	Int2 2015
16					mc8	mc14		L6c	mc14	mc15			L8c	mc12		
17 18	mc16															

Int2	Answer	% Correct	Reasoning
2000 MC 16	C	80	 Cyclohexane has • Formula = C_6H_{12} • Six carbons is a ring • No C=C double bonds
2004 MC 8	B	85	☒A C_7H_{16} is a alkane due to general formula C_nH_{2n+2} ☑B C_7H_{14} is a cycloalkane with general formula C_nH_{2n} ☒C C_7H_{12} is not a cycloalkane as it does not fit general formula C_nH_{2n} ☒D C_7H_{10} is not a cycloalkane as it does not fit general formula C_nH_{2n}
2005 MC 14	B	76	☒A Molecule shown has formula C_6H_{14} and compound Y has formula C_6H_{12} ☑B Compound Y is cyclohexane as it has formula C_6H_{12} and does not decolourise Br_2 ☒C Compound Y has no C=C double bond as it does not decolourise Bromine solution ☒D Compound Y has no C=C double bond as it does not decolourise Bromine solution
2008 MC 14	C	87	C_4H_6 | C_5H_8 | C_6H_{10} Correct general formula: C_nH_{2n-2} If n=4: 2n-2 = (2x4) -2 = 8-2 = 6 | If n=5: 2n-2 = (2x5) -2 = 10-2 = 8 | If n=6: 2n-2 = (2x6) -2 = 12-2 = 10
2009 MC 15	C	87	☒A Cycloalkanes have general formula C_nH_{2n}: C_7H_{10} has wrong number of H atoms ☒B Cycloalkanes have general formula C_nH_{2n}: C_7H_{12} has wrong number of H atoms ☑C Cycloalkanes have general formula C_nH_{2n}: C_7H_{14} is cycloheptane ☒D Cycloalkanes have general formula C_nH_{2n}: C_7H_{16} has wrong number of H atoms
2013 MC 12	C	68	☒A cyclohexane has the formula C_6H_{12} ☒B cyclohexane does not rapidly decolourise bromine solution (no C=C double bond) ☑C cyclohexane has the formula C_6H_{12} and does not react with bromine solution ☒D cyclohexane has the formula C_6H_{12}

Int2	Answer	Reasoning
2007 6c	Hexene	C_6H_{12} could be hexene or cyclohexane. However, as compound B decolourises bromine solution it must have a C=C double and therefore cannot be cyclohexane and must be hexene.
2012 8c	Cyclohexane	C_6H_{12} is either hexene or cyclohexane. As hydrocarbon C is saturated, C must be cyclohexane and not hexene as hexene has a C=C double bond and is unsaturated.

Nat5
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Outcome	2000 Credit	2001 Credit	2002 Credit	2003 Credit	2004 Credit	2005 Credit	2006 Credit	2007 Credit	2008 Credit	2009 Credit	2010 Credit	2011 Credit	2012 Credit	2013 Credit		
16																
17 18																

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Outcome	2000 General	2001 General	2002 General	2003 General	2004 General	2005 General	2006 General	2007 General	2008 General	2009 General	2010 General	2011 General	2012 General	2013 General		
16																
17 18																