

NAT 3 a short report, of 30–50 words or equivalent, which covers both Assessment Standards 2.2 and 2.3.	Evidence Required and Commentary on Assessment Judgements	NAT 4 a short report, of 40–70 words or equivalent, which covers both Assessment Standards 2.2 and 2.3.	Evidence Required and Commentary on Assessment Judgements	NAT 5 a short report, of 50–100 words or equivalent, which covers both Assessment Standards 2.2 and 2.3.	Evidence Required and Commentary on Assessment Judgements
2.2 Describing an application	An appropriate description of a given application of chemistry is provided by the candidate. <i>Evidence must include the use of chemistry knowledge to describe the given application and its effect on the environment/society.</i>	Describing an application	The description of an application of chemistry should demonstrate knowledge and understanding of the application. <i>Evidence must demonstrate that the candidate has some understanding of the chemistry related to the application and its effect on the environment/society.</i>	2.2 Describing an application	The description of an application of chemistry should demonstrate knowledge and understanding of the application. <i>Evidence must demonstrate that the candidate has a clear understanding of the chemistry related to the application and its effect on the environment/society.</i>
2.3 Describing a given chemical issue in terms of the effect on the environment/society	An effect on the environment/society of the given chemical issue is described appropriately. <i>The candidate's report should make statements that are relevant to the application and to the issue, which demonstrate understanding of the underlying chemistry. These should use terms and ideas that are correct and at a depth appropriate to National 3 Chemistry.</i>	2.3 Describing a chemical issue in terms of the effect on the environment/society	A chemical issue should be described in such a way that its effect on the environment/society is clear. <i>The candidate's report should make statements that are relevant to the application and to the issue, which demonstrate understanding of the underlying chemistry. These should use terms and ideas that are correct and at a depth appropriate to National 4 Chemistry.</i>	2.3 Describing a chemical issue in terms of the effect on the environment/society	A chemical issue should be described in such a way that its effect on the environment/society is clear. <i>The candidate's report should make statements that are relevant to the application of chemistry, and to the issue, which demonstrate understanding of the underlying chemistry. These should use terms and ideas that are correct and at a depth appropriate to National 5 Chemistry.</i>

Outcome
2.2 and
2.3
Comparison

Suggestions for research topics from Unit 1	<p>Element Investigate the uses of an element and describe the advantage and/or disadvantage associated with its use.</p> <p>Acids Investigate the use of an acid and describe advantages/disadvantages associated with its use</p>	Suggestions for research topics from Unit 1	<p>Acids and bases Candidates must give an example and use of an acid or base and how it helps us. Examples could include stings/bites, accidental ingestion, acidic foods/medicines for teeth or indigestion, acid attacks/spills, chopping onions, folic acid/pregnancy.</p>	Suggestions for research topics from Unit 1	<p>Acids (Investigate a cause of acidification of soil and water in the environment. Describe possible environmental impacts and measures that can be taken to prevent or treat them.)</p>
Suggestions for research topics from Unit 2	<p>Fuels Through investigation of different types of fuels, choose one fuel and give the advantages and disadvantages of this fuel which include the impact on the environment /society.</p> <p>Plants to products Discuss why plants are an important part of our everyday lives.</p>	Suggestions for research topics from Unit 2	<p>Food or Fuel: Land can be used to grow food or as a source of fossil fuels. Carry out a research investigation on a food or fuel, eg corn oil, rape seed oil, sugar cane. Your answer should include a balanced argument of whether land should be used to grow food or as a supply of fossil fuels and describe the social and environmental impact.</p> <p>Biomass: Carry out a research investigation on biomass as an alternative source of fuel and its impact on the environment/society. Your answer must include the description of at least one type of biomass and how it is used as a fuel and its environmental/social impact.</p>	Suggestions for research topics from Unit 2	<p>Uses of branched chain alkanes Uses of branched chain alkenes Uses of alcohols Uses of carboxylic acids</p>
Suggestions for research topics from Unit 3	<p>Plastics The candidate should identify one plastic and give one everyday use and one example of a natural material replaced by plastic.</p>	Suggestions for research topics from Unit 3	<p>Alloys Investigate one alloy, its properties and usefulness.</p>	Suggestions for research topics from Unit 3	<p>Uses and properties of new polymers with impact on the environment /society Uses and properties of new batteries with impact on the environment /society Uses of radioisotopes with impact on the environment /society</p>

Outcome
2.2 and
2.3
Comparison

Suggested
Topics
(taken from
Nat 3/4/5
SQA
documents)

Combined Approach UASP Package 2

NAT 5

Unit	Key area	Applications	Issues	Practical
Chemical Changes and Structure	Atomic structure and bonding	To investigate uses of electrolytes	Investigate the effect of using electrolytes on the environment/ society	Factors affecting the ionic conductivity of a solution
Nature's Chemistry	Energy from fuels	Use of different fuels	Investigate the environmental issues relating to using petrol as a fuel compared to biofuels	Experiment to compare energy released from alcohols using $E = cm \Delta T$
Nature's Chemistry <i>and</i> Chemistry in Society	Everyday consumer products chemical analysis	Uses of vinegar	Investigate the effect of using vinegar on the environment and society	Compare the concentration of ethanoic acid in different types of vinegar — malt/ wine/ spirit/ cider
Chemistry in Society	Metals	To investigate recent developments in battery technology	Investigate the effect of battery use on the environment/society, ie source of raw materials/disposal	To determine the factors which affect voltage