

Loudoun Academy Science Department



National 5 Discrete Sciences - Course Guidance

- A summary of the curriculum content, is contained within individual named units (three teaching blocks for Biology and Chemistry and 6 for Physics).
- Through the delivery of the National 5 course, there will be four department assessments and these will take place at the following times: June (S4), December (S4), January (S4) and April (S4) and will be used to monitor progress at National 5 level.
- Students have a wide range of classroom resources:
 - 1. Success criteria**

Helps you to understand **what you need to learn**.
 - 2. Class notes**

Tool for documenting the lesson content and giving info for revision and further study activities.
 - 3. Summary questions**

To help address success criteria and highlight key knowledge and understanding (what you **need to know**).
 - 4. Past paper questions**

To gain practise with exam format, wording and phrasing.
 - 5. Evaluations**

To assess progress and highlight areas of development (what you **don't** know).
 - 6. Exam command words**

Highlights key words/phrases used in exams/assessment tasks, tells how you should answer SQA questions.
 - 7. Study skills sheet**

Possible strategies to support revision and current learning.

BIOLOGY – National 5

| Unit Name | | Additional Notes | Link to Key Theory |
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| 1 | Cell biology | <p>The key areas covered are:</p> <ul style="list-style-type: none"> ▪ cell structure; ▪ transport across cell membranes; ▪ DNA and the production of proteins; ▪ proteins; ▪ genetic engineering; ▪ respiration. <p>Past Paper Reference: https://www.sqa.org.uk/pastpapers/findpastpaper.htm?searchText=&subject=Biology&level=N5&includeMi=on</p> | <p>BBC Bitesize Learner Guides: https://www.bbc.co.uk/bitesize/topics/zfnc87h</p> <p>Classroom Videos: https://www.bbc.co.uk/bitesize/topics/zfnc87h/resources/1</p> <p>SCHOLAR Revision Activities: https://scholar.hw.ac.uk/courses/activities/N5BIO</p> <p>Study Guides: https://scholar.hw.ac.uk/courses/downloads/N5BIO/all</p> |
| 2 | Multicellular organisms | <p>The key areas covered are:</p> <ul style="list-style-type: none"> ▪ producing new cells; ▪ control and communication; ▪ reproduction; ▪ variation and inheritance; ▪ transport systems — plants; ▪ transport systems — animals; ▪ absorption of materials. <p>Past Paper Reference: https://www.sqa.org.uk/pastpapers/findpastpaper.htm?searchText=&subject=Biology&level=N5&includeMi=on</p> | <p>BBC Bitesize Learner Guides: https://www.bbc.co.uk/bitesize/topics/z942tfr</p> <p>Classroom Videos: https://www.bbc.co.uk/bitesize/topics/z942tfr/resources/1</p> <p>SCHOLAR Revision Activities: https://scholar.hw.ac.uk/courses/activities/N5BIO</p> <p>Study Guides: https://scholar.hw.ac.uk/courses/downloads/N5BIO/all</p> |

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| 3 | Life on Earth | <p>The key areas covered are:</p> <ul style="list-style-type: none"> ▪ ecosystems; ▪ distribution of organisms; ▪ photosynthesis; ▪ energy in ecosystems; ▪ food production; ▪ evolution of species. <p>Past Paper Reference: https://www.sqa.org.uk/pastpapers/findpastpaper.htm?searchText=&subject=Biology&level=N5&includeMi=on</p> | <p>BBC Bitesize Learner Guides: https://www.bbc.co.uk/bitesize/topics/zgbw2hv</p> <p>Classroom Videos: https://www.bbc.co.uk/bitesize/topics/zgbw2hv/resources/1</p> <p>SCHOLAR Revision Activities: https://scholar.hw.ac.uk/courses/activities/N5BIO</p> <p>Study Guides: https://scholar.hw.ac.uk/courses/downloads/N5BIO/all</p> |
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CHEMISTRY – National 5

| Unit Name | | Additional Notes | Link to Key Theory |
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| 1 | Chemical changes and structure | <p>In this area, topics covered are:</p> <ul style="list-style-type: none"> ▪ rates of reaction; ▪ atomic structure and bonding related to properties of materials; ▪ formulae and reacting quantities; ▪ acids and bases. <p>Past Paper Reference: https://www.sqa.org.uk/pastpapers/findpastpaper.htm?searchText=&subject=Chemistry&level=N5&includeMi=on</p> <p>https://jabchem.org.uk/</p> | <p>BBC Bitesize Learner Guides: https://www.bbc.co.uk/bitesize/topics/zgwdmp3</p> <p>Classroom Videos: https://www.bbc.co.uk/bitesize/topics/zgwdmp3/resources/1</p> <p>SCHOLAR Study Guides: https://scholar.hw.ac.uk/courses/browse/N5CHE/0/-1</p> <p>Revision Assessments : https://scholar.hw.ac.uk/courses/content/N5CHE/0/9/0/0/Chemical-changes-and-structure_End-of-section-test_End-of-section-test_End-of-section-test</p> |
| 2 | Nature's chemistry | <p>In this area, topics covered are:</p> <ul style="list-style-type: none"> ▪ homologous series; ▪ everyday consumer products; ▪ energy from fuels. <p>Past Paper Reference: https://www.sqa.org.uk/pastpapers/findpastpaper.htm?searchText=&subject=Chemistry&level=N5&includeMi=on</p> <p>https://jabchem.org.uk/</p> | <p>BBC Bitesize Learner Guides: https://www.bbc.co.uk/bitesize/topics/zqphvcw</p> <p>Classroom Videos: https://www.bbc.co.uk/bitesize/topics/zqphvcw/resources/1</p> <p>SCHOLAR Study Guides: https://scholar.hw.ac.uk/courses/browse/N5CHE/1/-1</p> <p>Revision Assessments : https://scholar.hw.ac.uk/courses/content/N5CHE/1/7/0/0/Nature's-chemistry_End-of-section-test_End-of-section-test_End-of-section-test</p> |

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| 3 | Chemistry in society | <p>In this area, topics covered are:</p> <ul style="list-style-type: none"> ▪ metals; plastics; ▪ fertilisers; ▪ nuclear chemistry; ▪ chemical analysis. <p>Past Paper Reference: https://www.sqa.org.uk/pastpapers/findpastpaper.htm?searchText=&subject=Chemistry&level=N5&_includeMi=on</p> <p>https://jabchem.org.uk/</p> | <p>BBC Bitesize</p> <p>Learner Guides: https://www.bbc.co.uk/bitesize/topics/zkm2pv4</p> <p>Classroom Videos: https://www.bbc.co.uk/bitesize/topics/zkm2pv4/resources/1</p> <p>SCHOLAR</p> <p>Study Guides: https://scholar.hw.ac.uk/courses/browse/N5CHE/2/-1</p> <p>Revision Assessments : https://scholar.hw.ac.uk/courses/content/N5CHE/2/8/0/0/Chemistry-in-society_End-of-section-test_End-of-section-test_End-of-section-test</p> |
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PHYSICS – National 5

| Unit Name | | Additional Notes | Link to Key Theory |
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| 1 | Dynamics | <p>In this area, the topics covered are:</p> <ul style="list-style-type: none"> ▪ vectors and scalars; ▪ velocity–time graphs; ▪ acceleration; ▪ Newton’s laws; ▪ energy; ▪ projectile motion. <p>Past Paper Reference: https://www.sqa.org.uk/pastpapers/findpastpaper.htm?searchText=&subject=Physics&level=N5&includeMi=on</p> <p>Mr Smith's Physics - youtube channel https://www.youtube.com/channel/UC_kdcG3xwcEM33u1dfuMDZg</p> | <p>BBC Bitesize Learner Guides: https://www.bbc.co.uk/bitesize/topics/zgns7p3</p> <p>Classroom Videos: https://www.bbc.co.uk/bitesize/topics/zgns7p3/resources/1</p> <p>SCHOLAR Revision Activities: https://scholar.hw.ac.uk/courses/activities/N5PHY</p> <p>Study Guides: https://scholar.hw.ac.uk/courses/downloads/N5PHY/all</p> |
| 2 | Space | <p>The key areas covered are:</p> <ul style="list-style-type: none"> ▪ space exploration; ▪ cosmology. <p>Past Paper Reference: https://www.sqa.org.uk/pastpapers/findpastpaper.htm?searchText=&subject=Physics&level=N5&includeMi=on</p> <p>Mr Smith's Physics - youtube channel https://www.youtube.com/channel/UC_kdcG3xwcEM33u1dfuMDZg</p> | <p>BBC Bitesize Learner Guides: https://www.bbc.co.uk/bitesize/topics/zyx68mn</p> <p>SCHOLAR Revision Activities: https://scholar.hw.ac.uk/courses/activities/N5PHY</p> <p>Study Guides: https://scholar.hw.ac.uk/courses/downloads/N5PHY/all</p> |

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| 3 | Electricity | <p>The key areas covered are:</p> <ul style="list-style-type: none"> ▪ electrical charge carriers; ▪ potential difference (voltage); ▪ Ohm's law; ▪ practical electrical and electronic circuits; ▪ electrical power. <p>Past Paper Reference: https://www.sqa.org.uk/pastpapers/findpastpaper.htm?searchText=&subject=Physics&level=N5&_includeMi=on</p> <p>Mr Smith's Physics - youtube channel https://www.youtube.com/channel/UC_kdcG3xwcEM33u1dfuMDZg</p> | <p>BBC Bitesize Learner Guides: https://www.bbc.co.uk/bitesize/topics/zs2m97h</p> <p>Classroom Videos: https://www.bbc.co.uk/bitesize/topics/zs2m97h/resources/1</p> <p>SCHOLAR Revision Activities: https://scholar.hw.ac.uk/courses/activities/N5PHY</p> <p>Study Guides: https://scholar.hw.ac.uk/courses/downloads/N5PHY/all</p> |
| 4 | Properties of matter | <p>In this area, the topics covered are:</p> <ul style="list-style-type: none"> ▪ specific heat capacity; ▪ specific latent heat; ▪ gas laws and the kinetic model. <p>Past Paper Reference: https://www.sqa.org.uk/pastpapers/findpastpaper.htm?searchText=&subject=Physics&level=N5&_includeMi=on</p> <p>Mr Smith's Physics - youtube channel https://www.youtube.com/channel/UC_kdcG3xwcEM33u1dfuMDZg</p> | <p>BBC Bitesize Learner Guides: https://www.bbc.co.uk/bitesize/topics/zpq7cj6</p> <p>Classroom Videos: https://www.bbc.co.uk/bitesize/topics/zpq7cj6/resources/1</p> <p>SCHOLAR Revision Activities: https://scholar.hw.ac.uk/courses/activities/N5PHY</p> <p>Study Guides: https://scholar.hw.ac.uk/courses/downloads/N5PHY/all</p> |

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| 5 | Waves | <p>In this area, the topics covered are:</p> <ul style="list-style-type: none"> ▪ wave parameters and behaviours; ▪ electromagnetic spectrum; ▪ refraction of light. <p>Past Paper Reference: https://www.sqa.org.uk/pastpapers/findpastpaper.htm?searchText=&subject=Physics&level=N5&includeMi=on</p> <p>Mr Smith's Physics - youtube channel https://www.youtube.com/channel/UC_kdcG3xwcEM33u1dfuMDZg</p> | <p>BBC Bitesize Learner Guides: https://www.bbc.co.uk/bitesize/topics/zx8d3k7</p> <p>Classroom Videos: https://www.bbc.co.uk/bitesize/topics/zx8d3k7/resources/1</p> <p>SCHOLAR Revision Activities: https://scholar.hw.ac.uk/courses/activities/N5PHY</p> <p>Study Guides: https://scholar.hw.ac.uk/courses/downloads/N5PHY/all</p> |
| 6 | Radiation | <p>In this area, the topic covered is:</p> <ul style="list-style-type: none"> ▪ nuclear radiation. <p>Past Paper Reference: https://www.sqa.org.uk/pastpapers/findpastpaper.htm?searchText=&subject=Physics&level=N5&includeMi=on</p> <p>Mr Smith's Physics - youtube channel https://www.youtube.com/channel/UC_kdcG3xwcEM33u1dfuMDZg</p> | <p>BBC Bitesize Learner Guides: https://www.bbc.co.uk/bitesize/topics/z29ky4j</p> <p>Classroom Videos: https://www.bbc.co.uk/bitesize/topics/z29ky4j/resources/1</p> <p>SCHOLAR Revision Activities: https://scholar.hw.ac.uk/courses/activities/N5PHY</p> <p>Study Guides: https://scholar.hw.ac.uk/courses/downloads/N5PHY/all</p> |