Year 7& 8 Science Curriculum

Northfield KS3 Centre

Pupils in Year 7 and 8 are following a thematic learning approach where Science and Maths are taught alongside each other. Themes are designed to both engage pupils in these subjects and give the subject content a real-life context. The thematic approach will also enable pupils to transfer skills across subject areas, helping to embed knowledge. Pupils will develop their knowledge and understanding of these topics as well as their practical science skills and understanding of scientific concepts by exploring 'big questions' that challenge pupils thinking about real-life scenarios.

Term	Overall theme	Science topics covered
Autumn 1	CSI	Using equipment safely Particle model Atoms elements and compounds Pure and impure substances
Autumn 2	Healthy Living	Nutrition and digestion Skeletal and muscular system Health and disease
Spring 1	All the fun of the fair	Forces and motion Rollercoasters Electricity and electromagnetism Waves
Spring 2		Cells and organisation Reproduction and genetics
Summer 1	Space, the final frontier	Relationships within ecosystems Space physics Earth and the atmosphere
Summer 2		Chemical reactions Energetics Periodic table Materials

Year 7 and 8 Science Curriculum

Dovedale, Hospitals & Specialist Provision

Overview: Pupils in Year 7 and 8 will follow a bespoke curriculum, created to support the variety of need of pupils. The curriculum will cover a number of topics this year that address a wide range of science topics, based upon the AQA KS3 curriculum. Pupils will develop their knowledge and understanding of these topics as well as their practical science skills and understanding of scientific concepts by exploring 'big questions' that challenge pupils thinking about real-life scenarios.

Term	Topics to be covered
Autumn 1	Safety in the Lab **What are substances made of?** Chemical reactions Acids and alkalis
Autumn 2	**What are living things made from?** Cells Reproduction and growth
Spring 1	**Can anything eat wasps?** Ecosystems and ecological relationships Inheritance and extinction
Spring 2	**How do we hear?** Sound
Summer 1	**Why can you walk on custard?** Particle model and changes in state
Summer 2	**What is a rainbow?** Light and colour

Year 9 Science Curriculum

Where possible pupils in Year 9 pupils will begin their key stage 4 course by following the first year of the BTEC First in Applied Science course. Pupils will develop their knowledge and understanding of these topics as well as their practical science skills and understanding of scientific concepts whilst learning about a number of different scientific topics. Pupils will learn through traditional lessons, practical tasks and assignment work.

Alongside their BTEC work, pupils will also complete assignments towards the Entry Level Certificate in Science. This will take the form of check-in and check-out assessments and completing write-ups for a number of different required practical activities.

For additional information please see:
http://qualifications.pearson.com/en/qualifications/btec-firsts/applied-science-2012-nqf.html
http://www.aqa.org.uk/subjects/science/elc/science-5948

Term	Topics to be covered
Autumn 1	2.1 Reactivity and bonding Chemical reactions and chemical bonding Physical changes
Autumn 2	2.2 Physical and chemical changes Chemical reactions 2.3 Rates of reaction Industrial reactions
Spring 1	2.4 Factors affecting the environment Pollution Natural events affecting the Earth
Spring 2	4.1 Variation and evolution Variation and classification of life Evolution and interdependence
Summer 1	4.2 Ecosystems Human impact on the environment
Summer 2	4.3 Human Health Human health and disease

Year 10 Science Curriculum—Route 1 (GCSE)

Pupils in year 10 will follow one of two routes in science.

Following route 1, pupils will complete a combined science GCSE consisting of 8 units which combine different aspects of the science national curriculum following the AQA Combined Science: Synergy syllabus.
Alongside the theory content, pupils will completed 21 required practical activities over the 2 year course which will develop scientific enquiry skills that will be examined in their final exam papers. There will be 4 final GCSE exam papers each worth 25%.

Term	Topics to be covered
Autumn 1	**Unit 1 Building Blocks** Atoms, particles , cells and waves
Autumn 2	**Unit 5 Building blocks 2** Periodic table and chemical reactions
Spring 1	**Unit 2 Transport over larger distances** Systems in the human body
Spring 2	**Unit 8 guiding spaceship Earth to a sustainable future** Carbon chemistry, resources and energy
Summer 1	**Unit 6 Interactions over small and large distances** Forces and energy Structure and bonding
Summer 2	**Unit 7 Movement and interactions** Forces and motion

Year 10 Science Curriculum—Route 2 (BTEC)

Pupils in year 10 will follow one of two routes in science.
Following route 2 pupils will complete the BTEC First in Applied Science course. Pupils will develop their knowledge and understanding of their practical science skills and understanding of scientific concepts whilst learning about a number of different scientific topics. Pupils will learn through traditional lessons, practical tasks and assignment work.

Alongside their BTEC work, pupils will also complete assignments towards the Entry Level Certificate in Science. This will take the form of check-in and check-out assessments and completing write-ups for a number of different required practical activities.

For additional information please see:
http://qualifications.pearson.com/en/qualifications/btec-firsts/applied-science-2012-nqf.html
http://www.aqa.org.uk/subjects/science/elc/science-5948

Term	Topics to be covered
Autumn 1	3.1 Ionising radiation
Autumn 2	3.2 Production of Electrical energy 3.3 The Solar System and universe
Spring 1	Unit 1 Cells, inheritance and genetics
Spring 2	Unit 1 Periodic table, atoms and elements
Summer 1	Unit 1 Energy sources
Summer 2	2.1 reactivity and bonding Chemical reactions and bonding

Year 11 Science Curriculum

Pupils in year 11 are studying for OCR Gateway GCSE Core Science. This consists of two external examinations and a controlled assessment. Last year, pupils studied unit 1: B1 Understanding organisms, C1 Carbon Chemistry and P1 Energy for the home. This year, they have been studying Unit 2: B2 Understanding our Environment, P2 Living for the Future and C2 Chemical Resources. All pupils also complete a controlled assessment which counts for 25% of their final GCSE grade. Unit 1 (worth 35%) will be examined on … … and Unit 2 (worth 40%) will be examined on … ….

For additional information please visit:

http://www.ocr.org.uk/qualifications/gcse-gateway-science-suite-science-b-j261-from-2012/

Term	Topics to be covered
Autumn 1	B2 Understanding the environment Classification and interactions within ecosystems
Autumn 2	C2 Chemical resources Construction materials
Spring 1	C2 Chemical resources Making chemicals, acids and alkalis
Spring 2	P2 energy resources Renewable and non-renewable energy sources
Summer 1	Revision
Summer 2	Revision and exams