



SCIENCE DEPARTMENT

Curriculum Overview



The curriculum at West Derby School reflects the aspirations we have for all students. It is designed to be as ambitious as the National Curriculum, offering a first-class education that is rich in knowledge and skills, whilst also being broad and balanced throughout the key stages. In Science, we aim to develop confident scientists with aspirations to develop their careers in the STEAM subjects and who have excellent scientific literacy to enable them to better understand the rapidly changing world in which they will live the rest of their lives.

Departmental Overview

The Science Department comprises 10 specialist teachers, 5 science laboratories, 5 teaching classrooms and 1 computer suite. There are also 3 laboratory preparation rooms, stocked with a wide range of equipment designed to support students in their learning. The department also has access to 2 class sets of iPads for independent research and 1 bank of laptops for data analysis and report writing. The department's key aims are to develop a passion for Science within our students, allowing them to access a wide range of specialist careers whilst developing scientific literacy for all alongside highly sought after analytic and problem solving skills to enhance employability across the board.

The Science department caters for SEND students using a wide variety of tailored approaches to teaching and learning which are matched to the specific needs of our students. In Science both formative and summative assessments are adjusted to ensure that they are accessible to all of our students and give teachers the most accurate information about every learner's developmental needs in this subject.

Departmental Staff

Mr R Clark	Director of Science
Mrs N Kitts	Deputy director of Science and Head of Chemistry
Ms T Reardon	Head of Biology
Mr J Lyons	Head of Physics
Mrs R Williams	Science Teacher and Head of 6 th Form
Mrs N Leybourne	Science Teacher PPL for Year 9
Mr P Evans	Science Teacher
Mrs K Forrest	Science Teacher
Ms L Roberts	Science Teacher and Assistant PPL for Year 7
Mr T Logue	Science Teacher
Mr K Hall	Senior Laboratory Technician
Mrs J Riley	Science Support
Mrs S Wilkinson	SLT Line Manager

Year 7 Science (KS3)

Examination/Specification Board

Key Stage 3 National Curriculum – Adapted for West Derby School.

Curriculum Overview

Term 1

→Biology – Cells
→Chemistry – Particles, atoms, elements compounds and mixtures
→Physics - Forces and magnetism

Term 2

→Biology – Organisation systems
→Chemistry – Separation techniques
→Physics - Pressure

Term 3

→Biology – Health and lifestyle
→Chemistry – The periodic table
→Physics – Energy

Y7 Term 1 Core Questions: <https://app.weduc.co.uk/get/external/p/id/4b5c2633ecb3b5ab3301a8eb52ea07d71d52b5354af7b6ff548d923c71350e82.docx>

Y7 Term 2 Core Questions: <https://app.weduc.co.uk/get/external/p/id/bb03fe98241faa8ecc5b31d88ab3e187f4ca1877317f1c5f904d433b73ef805b.docx>

Y7 Term 3 Core Questions: <https://app.weduc.co.uk/get/external/p/id/726ecf4939c4870397bc40364f4acf358bdfbdfb45a3e5c2f30af4d4d8c66e20.docx>

The department intent in Year 7 is focused on the acquisition of substantive knowledge based around topics which we consider to be the building blocks required for developing deeper understanding of Science. Along with this we promote a passion and enthusiasm for Science learning through the acquisition of disciplinary knowledge about how Scientists use different pieces of equipment and work safely in a laboratory. A baseline test is used to assess knowledge acquired at Key Stage 2 and teaching focuses initially on eliminating common misconceptions picked up at primary school in order to rapidly build upon this knowledge during this vital stage of student's development. Our spiral curriculum model requires that all topics taught in Term 3 require students to recall and use knowledge gained in Terms 1 and 2; which ensures that all students are regularly required to re-visit prior learning enabling them to develop strong links between key concepts in Science. All students are issued with a list of "Core Questions" each term which they are expected to practice remembering the answers to both in class and at home. Links to a copy of each of these documents can be found above. These questions and the practice of remembering their answers is vital to building students' knowledge of new key words and Scientific processes. In Year 7 student's cultural capital is increased through the inclusion of new experiences both in and out of the school environment.

Examinations/Key Assessments

Students are assessed in three formal assessment weeks on only on topics studied up to that point in the year. Students are also regularly assessed on aspects of the topics through the use of informal quizzes, homework and progress tasks in their lessons. Student's progress towards learning the answers to Core Questions is assessed at the start of each lesson through the use of "On the Bell" activities.

Homework

Homework in Science is set once per week. Often homework takes the form of multiple choice quizzes to reinforce learning from class at home. An independent learning booklet is provided online for all boys to complete tasks from. Additionally, homework will be set to review notes and revision materials before class tests. All homework is available to view through Satchel:One.

How Parents can Help

- Ensure through the use of Satchel:One that your son is completing the quizzes and homework set by his Science teacher.
- Ask your son to explain to you what he is learning about in his Science lessons to reinforce key ideas at home.
- Make regular use of the Core Questions at home to practice remembering answers off by heart. This can be done through quizzing your son on those he thinks he has learned the answers to or through encouraging the use of the look/cover/write/check method to learn the answers initially.

Year 8 Science (KS3)

Examination/Specification Board

Key Stage 3 National Curriculum – Adapted for West Derby School.

Curriculum Overview

Term 1

→Biology – Reproduction
→Chemistry – Acids and alkalis
→Physics - Electricity

Term 2

→Biology – Adaptation
→Chemistry – Chemical reactions
→Physics - Waves

Term 3

→Biology – Ecosystems
→Chemistry – The Earth
→Physics – Motion

Y8 Term 1 Core Questions: <https://app.weduc.co.uk/get/external/p/id/5be67ed2a24147b913b8e4d312a5518a665367ca4d66ae4fd803b8cd69fdb815.docx>

Y8 Term 2 Core Questions: <https://app.weduc.co.uk/get/external/p/id/2729fa9ea1e388f2ae5d09d9d9f9c9e7dadbf390ff4da226350db7621b38a849.docx>

Y8 Term 3 Core Questions: <https://app.weduc.co.uk/get/external/p/id/5c5c4b848ebea194d2e2f89d34dc1f99478641a19389b09764a4682596630c49.docx>

The department intent in Year 8 is focused on the acquisition of substantive knowledge based around topics which build upon that acquired in their Year 7 studies. Along with this we promote a passion and enthusiasm for Science learning through the acquisition of disciplinary knowledge about how Scientists challenge existing ideas and theories and process results of their experiments. Question level analysis of Year 7 assessments is used to identify areas in which students have struggled and teaching focuses initially on eliminating any misconceptions picked during Year 7. Our spiral curriculum model requires that all topics taught in Term 3 require students to recall and use knowledge gained in Terms 1 and 2; as well as knowledge from Year 7, which ensures that all students are regularly required to re-visit prior learning enabling them to develop strong links between key concepts in Science. All students are issued with a list of “Core Questions” each term which they are expected to practice remembering the answers to both in class and at home. Links to a copy of each of these documents can be found above. These questions and the practice of remembering their answers is vital to building students’ knowledge of new key words and Scientific processes. In Year 8 student’s cultural capital is increased through the inclusion of new experiences both in and out of the school environment.

Examinations/Key Assessments

Students are assessed in three formal assessment weeks on only on topics studied up to that point in the year; as well as topics from Year 7. Students are also regularly assessed on aspects of the topics through the use of informal quizzes, homework and progress tasks in their lessons. Student’s progress towards learning the answers to Core Questions is assessed at the start of each lesson through the use of “On the Bell” activities.

Homework

Homework in Science is set once per week. Often homework takes the form of multiple choice quizzes to reinforce learning from class at home. An independent learning booklet is provided online for all boys to complete tasks from. Additionally, homework will be set to review notes and revision materials before class tests. All homework is available to view through Satchel:One.

How Parents can Help

- Ensure through the use of Satchel:One that your son is completing the quizzes and homework set by his Science teacher.
- Ask your son to explain to you what he is learning about in his Science lessons to reinforce key ideas at home.
- Make regular use of the Core Questions at home to practice remembering answers off by heart. This can be done through quizzing your son on those he thinks he has learned the answers to or through encouraging the use of the look/cover/write/check method to learn the answers initially.
- Encourage your son to watch scientific programmes on television and read about scientific events in newspapers.

Year 9 Science (KS3)

Examination/Specification Board

Key Stage 3 National Curriculum Specification – Adapted for West Derby School and the AQA Trilogy GCSE Specification.

Curriculum Overview

Term 1

→Biology – Cells
→Chemistry – Atomic Structure
→Physics – Energy

Term 2

→ Biology – Organisation
→ Chemistry – Periodic Table
→ Physics - Particles

Term 3

→Biology – Plants and Animals
→ Chemistry – Structure and Bonding
→Physics – Nuclear Physics

Y9 Term 1 Core Questions: <https://app.weduc.co.uk/get/external/p/id/1b7562e42c72812e5d05c629680e93a673bdc14a1be4f2fda7a83498d60fdcd0.docx>

Y9 Term 2 Core Questions: <https://app.weduc.co.uk/get/external/p/id/f315ecf436edda95d79a712d23873da93d2f4fe3c4f83c657932aab5ac544da6.docx>

Y9 Term 3 Core Questions: <https://app.weduc.co.uk/get/external/p/id/76f06966724f3c2cc431ed5eefbaeedc9172dc1a31689368c4a3cf378bb32982.docx>

The department intent in Year 9 is focused on rapid addition to substantive knowledge acquired in both Year 7 and Year 8 with a view to preparing all students for the demands of the Science GCSE course. Our spiral curriculum model in Year 9 requires that students use knowledge acquired and schema developed from their Year 7 and Year 8 to accelerate their learning during this vital year in their development. Question level analysis of Year 8 assessments is used to identify areas in which students have struggled and teaching focuses initially on eliminating any misconceptions picked during Year 8. All students are issued with a list of “Core Questions” each term which they are expected to practice remembering the answers to both in class and at home. Links to a copy of each of these documents can be found above. The more students know about a topic, the quicker they can acquire new knowledge on that topic due to their more developed schema. As a consequence of the increased rate at which students can now acquire new knowledge and to ensure all boys are suitably challenged students will notice that their Year 9 Core Questions lists are significantly longer than those they used in Year 8. These questions and the practice of remembering their answers is vital to building students’ knowledge of new key words and Scientific processes. In Year 9 student’s cultural capital is increased through the inclusion of new experiences both in and out of the school environment. During Year 9 students begin to make choices about the future of their Science education and a greater focus is placed in lessons on careers in Science to better enable students to make informed decisions about their future.

Examinations/Key Assessments

Students are assessed in three formal assessment weeks on only on topics studied up to that point in the year; as well as topics from Year 7 and Year 8. Students are also regularly assessed on aspects of the topics through the use of informal quizzes, homework and progress tasks in their lessons. Student’s progress towards learning the answers to Core Questions is assessed at the start of each lesson through the use of “On the Bell” activities.

Homework

Homework in Science is set once per week. Often homework takes the form of multiple choice quizzes to reinforce learning from class at home. An independent learning booklet is provided online for all boys to complete tasks from. Additionally, homework will be set to review notes and revision materials before class tests. All homework is available to view through Satchel:One.

How Parents can Help

- Ensure through the use of Satchel:One that your son is completing the quizzes and homework set by his Science teacher.
- Ask your son to explain to you what he is learning about in his Science lessons to reinforce key ideas at home.
- Make regular use of the Core Questions at home to practice remembering answers off by heart. This can be done through quizzing your son on those he thinks he has learned the answers to or through encouraging the use of the look/cover/write/check method to learn the answers initially.

Year 10 Combined Science (KS4)

Examination/Specification Board

AQA (Trilogy)

Curriculum Overview

Term 1

→Biology – Disease
→Chemistry – Chemical changes
→Physics – Electricity

Term 2

→ Biology – Bioenergetics
→ Chemistry – Organic Chemistry
→ Physics - Electromagnetism

Term 3

→Biology – Ecosystems
→ Chemistry – The Earth
→Physics – Forces

Y10 Term 1 Core Questions: <https://app.weduc.co.uk/get/external/p/id/3bab53c77e318c5b2e65f19006ddd1307d6da731de3d6b214c797d067f0e8f7f.docx>

Y10 Term 2 Core Questions: <https://app.weduc.co.uk/get/external/p/id/3be6cbde4d0d4b141a2f6632721e0ca9ae8390d56c6cc9b6a95a942f0ae6888b.docx>

Y10 Term 3 Core Questions: <https://app.weduc.co.uk/get/external/p/id/93a2af7b86fb21cb929716b1c5fcd68a4d523e47c886cefe03fc7c79642ab9f4.docx>

In Year 10 the intent is to raise student aspirations through the use of contextual links between the Key Stage 4 curriculum and the world of work. Substantive and Disciplinary knowledge developed at Key Stage 3 is embedded across the Year 10 curriculum using the spiral curriculum model. An expectation of increasing resilience and independence is placed upon all students studying Science in Year 10. Student's cultural capital is increased through the inclusion of explicit links to Science in current events and a focus on careers.

All students are issued with a list of "Core Questions" each term which they are expected to practice remembering the answers to both in class and at home. Links to a copy of each of these documents can be found above. The more students know about a topic, the quicker they can acquire new knowledge on that topic due to their more developed schema. These questions and the practice of remembering their answers is vital to building students' knowledge of new key words and Scientific processes.

Examinations/Key Assessments

Students are assessed in three formal assessment weeks on the 1-9 scale only on topics studied up to that point in the year; as well as topics from Key Stage 3. Students are also regularly assessed on aspects of the topics through the use of informal quizzes, homework and progress tasks in their lessons. Student's progress towards learning the answers to Core Questions is assessed at the start of each lesson through the use of "On the Bell" activities.

Homework

Homework in Science is set once per week. Often homework takes the form of multiple choice quizzes to reinforce learning from class at home. An independent learning booklet is provided online for all boys to complete tasks from. Additionally, homework will be set to review notes and revision materials before class tests. All homework is available to view through Satchel:One.

How Parents can Help

- Ensure through the use of Satchel:One that your son is completing the quizzes and homework set by his Science teacher.
- Ask your son to explain to you what he is learning about in his Science lessons to reinforce key ideas at home.
- Make regular use of the Core Questions at home to practice remembering answers off by heart. This can be done through quizzing your son on those he thinks he has learned the answers to or through encouraging the use of the look/cover/write/check method to learn the answers initially.
- Encourage your son to watch scientific programmes on television and read about scientific events in newspapers.

Year 11 Combined Science (KS4)

Examination/Specification Board

AQA (Trilogy)

Curriculum Overview

Term 1

→Biology – Reproduction and Evolution
→Chemistry – Chemical calculations
→Physics – Motion

Term 2

→ Biology – Homeostasis
→ Chemistry – Rate of reaction
→ Physics - Waves

Term 3

GCSE Exam Preparation

Y11 Term 1 Core Questions: <https://app.weduc.co.uk/get/external/p/id/d410837625dd1b4e2f824477b7ec0d8b0223b6309a35b7cecbd2fdbde1757a62.docx>

Y11 Term 2 Core Questions: <https://app.weduc.co.uk/get/external/p/id/57321031427991fcbd3e3d0bb5266d37fdd11909d95a46bfab604b7feaf2faf3.docx>

In Year 11 the intent is to prepare students for the next stage of their Science education whilst ensuring that they are well prepared for their external GCSE examinations. Substantive and Disciplinary knowledge acquired at Key Stage 3 and in Year 10 is required across the Year 11 curriculum due to the spiral curriculum model. Learners are by now expected to be resilient and independent in their studies and student's cultural capital is increased through the inclusion of explicit links to Science in current events and a focus on careers.

All students are issued with a list of "Core Questions" each term which they are expected to practice remembering the answers to both in class and at home. Links to a copy of each of these documents can be found above. The more students know about a topic, the quicker they can acquire new knowledge on that topic due to their more developed schema. These questions and the practice of remembering their answers is vital to building students' knowledge of new key words and Scientific processes.

Examinations/Key Assessments

Students are assessed in two formal assessment weeks taking the form of Mock Examination on the 1-9 scale only on topics studied up to that point in the year; as well as topics from Key Stage 3 and Year 10. Students are also regularly assessed on aspects of the topics through the use of informal quizzes, homework and progress tasks in their lessons. Student's progress towards learning the answers to Core Questions is assessed at the start of each lesson through the use of "On the Bell" activities. External exams will be taken at once at the end of the course. There are no resit opportunities available. External assessment (100%). Biology, Chemistry and Physics will be assessed with 2 papers of 75 minutes for each discipline. Each subject paper is worth 16.7% and has 70 marks available.

Homework

Homework in Science is set once per week. Often homework takes the form of multiple choice quizzes to reinforce learning from class at home. An independent learning booklet is provided online for all boys to complete tasks from. Additionally, homework will be set to review notes and revision materials before class tests. All homework is available to view through Satchel:One.

How Parents can Help

- Ensure through the use of Satchel:One that your son is completing the quizzes and homework set by his Science teacher.
- Ensure that your son purchases the correct revision guide for the Tier of Entry he is taking.
- Make regular use of the Core Questions at home to practice remembering answers off by heart. This can be done through quizzing your son on those he thinks he has learned the answers to or through encouraging the use of the look/cover/write/check method to learn the answers initially.
- Encourage your son to watch scientific programmes on television and read about scientific events in newspapers.

Year 10/11 Separate Science (KS4)

Examination/Specification Board

AQA Biology, AQA Chemistry, AQA Physics

Curriculum Overview

Biology	Chemistry	Physics
B1: Cells	C1: Atomic structure	P1: Energy
B2: Organisation	C2: The periodic table	P2: Particles
B3: Infection and control	C3: Structure and bonding	P3: Forces
B4: Bioenergetics	C4: Chemical changes and separating techniques.	P4: Motion
B5: Homeostasis and response	C5: Organic chemistry	P5: Electricity
B6: Reproduction	C6: The Earth	P6: Electromagnetism
B7: Evolution	C7: Chemical calculations	P7: Waves
B8: Ecology	C8: Energy changes, rates and equilibrium.	P8: Nuclear Physics
	C9: Electrolysis	P8: Astrophysics

In Year 10 and Year 11 boys can choose to study Science as an option subject; known most usually as “Separate Science”. If they choose this option boys take a total of three GCSEs in Science; covering the same content as everyone else plus about 50% extra in each of the subject areas. At West Derby School we encourage all boys with a passion for Science to choose this option regardless of ability. The course is often seen as an excellent way for boys considering studying Science subjects at A Level to be as well prepared for these courses as possible. Substantive and Disciplinary knowledge developed at Key Stage 3 is embedded across the Year 10 curriculum using the spiral curriculum model. An expectation of increasing resilience and independence is placed upon all students studying Science in Year 10. Student’s cultural capital is increased through the inclusion of explicit links to Science in current events and a focus on careers. All students are issued with a list of “Core Questions” each term which they are expected to practice remembering the answers to both in class and at home. Links to a copy of each of these documents can be found in the Year 9, Year 10 and Year 11 sections above. The more students know about a topic, the quicker they can acquire new knowledge on that topic due to their more developed schema. These questions and the practice of remembering their answers is vital to building students’ knowledge of new key words and Scientific processes.

Examinations/Key Assessments

External exams will be taken at once at the end of the course. There are no resit opportunities available. External assessment (100%) Biology, Chemistry and Physics will be assessed with 2 papers of 105 minutes for each discipline. Each subject paper is worth 50% and has 100 marks available.

Homework

Each subject will set one homework task per week. All homework is set via Satchel:One and usually takes the form of multiple choice quizzes to reinforce learning outside the classroom. Additionally, homework will be set to review notes and revision materials before class tests. An independent learning booklet is provided online for all boys to complete tasks from. As students are studying for their GCSE examinations, homework will often be in the form of a past paper to be taken home and completed. All homework is available to view through Satchel:One.

How Parents can Help

- Ensure through the use of Satchel:One that your son is completing the quizzes and homework set by his Science teacher.
- Ensure that your son purchases the correct revision guide for the Tier of Entry he is taking.
- Make regular use of the Core Questions at home to practice remembering answers off by heart. This can be done through quizzing your son on those he thinks he has learned the answers to or through encouraging the use of the look/cover/write/check method to learn the answers initially.
- Encourage your son to watch scientific programmes on television and read about scientific events in newspapers.

Year 12/13 Biology (KS5)

Examination/Specification Board

AQA Biology

Curriculum Overview

The intent of the Science department at Key Stage 5 is to inspire students to study or gain employment in a scientific field at the end of their time at West Derby School. More sophisticated principles are included that build upon the Key Stage 4 curriculum whilst a focus on study skills and independence are included to prepare students for the world of further education. Student's cultural capital is increased through the inclusion of further education collaboration projects and work experience supplied through existing links with FE establishments and employers in the local area.

Biology is an exciting and ever changing field of study which can offer you many challenges and rewards. In A Level Biology you will cover dynamic and exciting topics such as; cell Biology, the functioning of living organisms and genetics and DNA. Studying Biology at A Level offers you many possible career options. Medicine, Dentistry, Nursing, Physiotherapy and Pharmacy all have a basis in A Level Biology. A Level Biology is taught by Mrs Forrest and Mr Evans.

Examinations/Key Assessments

Your A Level Biology studies will culminate in written exams. The development of your practical skills will be monitored and endorsed by your teacher and your knowledge and understanding of practical biology will be tested in the written exams. There is also a Practical Skills Verification (PSV) that you will work towards completing during your course, which is included on the certification document and is a requirement for some university courses.

Homework

One homework task will be set per week and may take up to 2 hours to complete. The majority of homework is set online via Satchel:One. Other homework tasks will involve extended investigations and research. Students are expected to supplement their homework for 2-3 hours per week both at home and in study sessions by consolidating their learning using the textbooks provided by the Science department, the internet and revision guides. Work towards the practical skills verification component of the course is set and should be submitted through Microsoft teams.

How Parents can Help

- Encourage your son/daughter to watch scientific programs on television, read about scientific events in newspapers and visit scientific sites on the internet.
- Check that homework is being completed regularly to consolidate learning.
- Ensure that your son has a quiet area to study free from distractions.
- Encourage your son/daughter to attend university open days and order prospectus documents to develop a clear vision of where they want to go after completion of their studies.
- Revision guides will be made available at cost price from the Science department. These should be purchased at the beginning of the course.

Year 12/13 Chemistry (KS5)

Examination/Specification Board

AQA Chemistry

Curriculum Overview

The intent of the Science department at Key Stage 5 is to inspire students to study or gain employment in a scientific field at the end of their time at West Derby School. More sophisticated principles are included that build upon the Key Stage 4 curriculum whilst a focus on study skills and independence are included to prepare students for the world of further education. Student's cultural capital is increased through the inclusion of further education collaboration projects and work experience supplied through existing links with FE establishments and employers in the local area.

Chemistry is the study of the world around us, from the smallest atom to life saving medicines. You will explore the fundamental principles that form the basis of chemistry such as atomic structure, bonding, periodicity and an introduction to organic chemistry. Students also look at the applications of these principles. You will also develop further the concepts and principles introduced at AS through topics; including equilibria, polymers, aromatic chemistry, thermodynamics, energetic chemistry and inorganic chemistry. A Level Chemistry is taught by Mrs Kitts and Mrs Williams.

Examinations/Key Assessments

Assessment of A Level Chemistry is designed to be rigorous, while maintaining fair and balanced question papers. This includes testing synoptic understanding, knowledge of how science works and providing stretch and challenge. For this course, 100% of the content is assessed by exam, 20% of the overall assessment will contain mathematical skills and at least 15% will assess knowledge, skills and understanding in relation to practical skills. There is also a Practical Skills Verification (PSV) that you will work towards completing during your course, which is included on the certification document and is a requirement for some university courses.

Homework

One homework task will be set per week and may take up to 2 hours to complete. The majority of homework is set online via Microsoft teams. Other homework tasks will involve extended investigations and research. Students are expected to supplement their homework for 2-3 hours per week both at home and in study sessions by consolidating their learning using the textbooks provided by the Science department, the internet and revision guides.

How Parents can Help

- Encourage your son/daughter to watch scientific programs on television, read about scientific events in newspapers and visit scientific sites on the internet.
- Check that homework is being completed regularly to consolidate learning.
- Ensure that your son has a quiet area to study free from distractions.
- Encourage your son/daughter to attend university open days and order prospectus documents to develop a clear vision of where they want to go after completion of their studies.
- Revision guides will be made available at cost price from the Science department. These should be purchased at the beginning of the course.

Year 12/13 Physics (KS5)

Examination/Specification Board

AQA Physics

Curriculum Overview

The intent of the Science department at Key Stage 5 is to inspire students to study or gain employment in a scientific field at the end of their time at West Derby School. More sophisticated principles are included that build upon the Key Stage 4 curriculum whilst a focus on study skills and independence are included to prepare students for the world of further education. Student's cultural capital is increased through the inclusion of further education collaboration projects and work experience supplied through existing links with FE establishments and employers in the local area.

Physics is the study of our universe. Throughout this course you will develop an understanding and appreciation of the mechanics of our universe. You will research issues that have a huge impact on our society today including Nuclear Physics and Quantum Mechanics. Physics is a highly sought after qualification and one which opens the door to a number of careers such as Medicine, Engineering, Dentistry, Optics and Teaching. A Level Physics is taught by Mr Clark and Mr Donga.

Examinations/Key Assessments

Assessment of A-level Physics is designed to be rigorous, while maintaining fair and balanced question papers. This includes testing synoptic understanding, knowledge of How Science Works and providing stretch and challenge. The course is assessed through three exam papers which cover the entire programme of study as well as assessing practical skills and techniques practiced during your sixth form lessons. There is also a Practical Skills Verification (PSV) that you will work towards completing during your course, which is included on the certification document and is a requirement for some university courses.

Homework

One homework task will be set per week and may take up to 2 hours to complete. The majority of homework is set online through Microsoft teams. Other homework tasks will involve extended investigations and research. Students are expected to supplement their homework for 2-3 hours per week both at home and in study sessions by consolidating their learning using the textbooks provided by the Science department, the internet and revision guides. Work towards the practical skills verification component of the course is set and should be submitted through Microsoft teams.

How Parents can Help

- Encourage your son/daughter to watch scientific programs on television, read about scientific events in newspapers and visit scientific sites on the internet.
- Check that homework is being completed regularly to consolidate learning.
- Ensure that your son has a quiet area to study free from distractions.
- Encourage your son/daughter to attend university open days and order prospectus documents to develop a clear vision of where they want to go after completion of their studies.
- Revision guides will be made available at cost price from the Science department. These should be purchased at the beginning of the course.

Year 12/13 Applied Science (KS5)

Examination/Specification Board

EDEXCEL (BTEC)

Curriculum Overview

The intent of the Science department at Key Stage 5 is to inspire students to study or gain employment in a scientific field at the end of their time at West Derby School. More sophisticated principles are included that build upon the Key Stage 4 curriculum whilst a focus on study skills and independence are included to prepare students for the world of further education. Student's cultural capital is increased through the inclusion of further education collaboration projects and work experience supplied through existing links with FE establishments and employers in the local area.

Science is the study of the world around us; throughout this course you will develop your skills as a scientist and gain an understanding of industrial science. You will acquire new practical skills required for the scientific industry. This sector is highly varied and diverse. You will become familiar with different aspects of industry including, Food and Drink, Sports Science, Genetic engineering and Medical Sciences. Students completing their BTEC Nationals in Applied Science will be aiming to go on to employment, often via the stepping stone of higher education. A qualification in Applied Science can lead to study at university in Sports Science, Science and Football, Nursing, Natural Sciences, Sports Psychology and Applied Psychology. You will also have the skills necessary to train as a laboratory technician in large pharmaceutical companies, hospitals, universities and schools. The Applied Science course is taught by Mrs Kitts, Mr Lyons and Mrs Williams.

Examinations/Key Assessments

You will complete 6 units in total, of which 58% is externally assessed by examination. The remaining content is assessed by the completion of a coursework portfolio.

Homework

Each subject will set one homework task per week. The majority of homework is set online via Microsoft teams. Other homework tasks will involve extended investigations and research.

How Parents can Help

- Encourage your son/daughter to watch scientific programs on television, read about scientific events in newspapers and visit scientific sites on the internet.
- Check that homework is being completed regularly to consolidate learning.
- Revision guides will be made available at cost price from the Science department. These should be purchased at the beginning of the course.