Curriculum Overview

Subject: Biology

Year Group: 11

CHASE HIGH
Aspirations, Character & Excellence

Year 10 & 11 Biology is **academically ambitious.** Throughout Key Stage 4 (KS4) students will extend the **powerful knowledge** already developed in KS3. Each Lesson has a particular **LORIC** and **Career focus** reflecting the school's improvement plan.

With a focus on Key Concepts, Apparatus and Techniques across all topics students will develop the **subject disciplinary knowledge** needed to scrutinise the world around them and communicate their findings effectively. Students will follow the AQA GCSE Biology specification and are required to undertake 10 required practical activities, developing analytical and rational thought processes through planning, experimentation and reflection. Developing extended science writing through the use of long written questions (LWQ) has been identified as a particular area of development. **Interleaving questions** at the beginning of every lesson allow students to spend time recalling previous learning so that **practise** makes permanent.

TERM 1	**TERM 2**	**TERM 3**
KNOWLEDGE/SKILLS **B13**- Reproduction (DNA, genome, inheritance, genetic disorders, DNA structure, mutations) **B15** -Genetics and evolution (Fossils, extinction, classification, resistant bacteria). Personalised Revision from Year 10 PPE Skills: • AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures. • AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures. • AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.	KNOWLEDGE/SKILLS **B18**- Biodiversity and ecosystems (Pollution, global warming, biodiversity, tropic levels, food sustainability) **B12** - Homeostasis in action (Body temperature, Kidney, dialysis) Personalised Revision from December PPE Skills: • AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures. • AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures. • AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.	KNOWLEDGE/SKILLS Personalised Revision from Easter PPE Skills: • AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures. • AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures. • AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.

KEY ASSESSMENTS	KEY ASSESSMENTS	KEY ASSESSMENTS
Half term 1: Mitosis and meiosis LWQ Reproduction test Half term 2: Genetics and evolution test December PPE	Half term 1: Rates of decomposition LWQ Half term 2: The human kidney LWQ Easter PPE	Half term 1: Half term 2: GCSE

Extended reading suggestions and external resources:

KS4 Bitesize Science https://www.bbc.co.uk/bitesize/subjects/z9ddmp3
Oak National Academy Lessons https://classroom.thenational.academy/subjects-by-key-stage/key-stage-4/subjects/biology
Chase High Youtube Playlists https://www.youtube.com/channel/UCSK4ImJfi5sPH4UBp7cZtyQ

We actively encourage students to read and research about the wider Scientific word- Planet Earth and Perfect Planet both on BBC iPlayer are examples of where students can engage with Science from the safety and comfort of their own homes.

Curriculum Overview

Subject: Chemistry

Year Group: 11

CHASE HIGH
Aspirations, Character & Excellence

Year 10 & 11 Chemistry is **academically ambitious.** Throughout Key Stage 4 (KS4) students will extend the **powerful knowledge** already developed in KS3. Each Lesson has a particular **LORIC** and **Career focus** reflecting the school's improvement plan.

With a focus on Key Concepts, Apparatus and Techniques across all topics students will develop the **subject disciplinary knowledge** needed to scrutinise the world around them and communicate their findings effectively. Students will follow the AQA GCSE Chemistry specification and are required to undertake 8 required practical activities, developing analytical and rational thought processes through planning, experimentation and reflection. Developing extended science writing through the use of long written questions (LWQ) has been identified as a particular area of development. **Interleaving questions** at the beginning of every lesson allow students to spend time recalling previous learning so that **practise**

TERM 1	**TERM 2**	**TERM 3**
KNOWLEDGE/SKILLS **C12** - Chemical analysis (Chromatography, gas tests, instrumental, positive/negative ions). **C9**- Crude oil and fuels (Hydrocarbons, fractional distillation) **C10**- Organic reactions (Alkenes, alcohol, carboxylic esters/ acids) **C11**- Polymers (addition/ condensation, natural) Personalised Revision from Year 10 PPE Skills: • AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures. • AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.	KNOWLEDGE/SKILLS **C14-** Earth's resources (Potable water, waste water treatment, life cycle assessments, extracting metals) **C15** - Using our resources (Rusting, glass/ceramics/composites, Haber process, Fertilisers) Personalised revision from December PPE Skills: • AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures. • AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.	KNOWLEDGE/SKILLS Personalised revision from Easter PPE Skills: • AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures. • AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures. • AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw

• AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.	• AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.	conclusions; develop and improve experimental procedures.
KEY ASSESSMENTS Half term 1: Chemical analysis Hydrocarbons test Half term 2: Organic reactions LWQ December PPE exams	KEY ASSESSMENTS Half term 1: Treating waste water LWQ Half term 2: Using our resources test Easter PPE exams	KEY ASSESSMENTS Half term 1: Half term 2: GCSE
Extended reading suggestions and external resources: KS4 Bitesize Science https://www.bbc.co.uk/bitesize/subjects/zs6hvcw Oak National Academy Lessons https://classroom.thenational.academy/subjects-by-key-stage/key-stage-4/subjects/chemistry Chase High Youtube Playlists https://www.youtube.com/channel/UCSK4ImJfi5sPH4UBp7cZtyQ We actively encourage students to read and research about the wider Scientific word- Planet Earth and Perfect Planet both on BBC iPlayer are examples of where students can engage with Science from the safety and comfort of their own homes.		

Curriculum Overview

Subject: Physics

Year Group: 11

CHASE HIGH
Aspirations, Character & Excellence

Year 10 & 11 Physics is **academically ambitious.** Throughout Key Stage 4 (KS4) students will extend the **powerful knowledge** already developed in KS3. Each Lesson has a particular **LORIC** and **Career focus** reflecting the school's improvement plan.

With a focus on Key Concepts, Apparatus and Techniques across all topics students will develop the **subject disciplinary knowledge** needed to scrutinise the world around them and communicate their findings effectively. Students will follow the AQA GCSE Physics specification and are required to undertake 10 required practical activities, developing analytical and rational thought processes through planning, experimentation and reflection. Developing extended science writing through the use of long written questions (LWQ) has been identified as a particular area of development. **Interleaving questions** at the beginning of every lesson allow students to spend time recalling previous learning so that **practise** makes permanent.

TERM 1	**TERM 2**	**TERM 3**
KNOWLEDGE/SKILLS **P11- Force and pressure** (atmospheric, floatation, surfaces) **P12- Wave properties** (reflection, refraction, nature of waves, uses of ultrasound, seismic) **P13- Electromagnetic waves** (communication, X-rays in medicine) Personalised revision from Year 10 PPE Skills: • AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures. • AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.	KNOWLEDGE/SKILLS **P14- Light** (refraction, reflection, lenses) **P15 -Electromagnetism** (Fields, motor effect, transformers) **P16- Space** (formation, stars, planets/satellites, red shift) Personalised revision from December PPE Skills: • AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures. • AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.	KNOWLEDGE/SKILLS Personalised revision from Easter PPE Skills: • AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures. • AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.

• AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.	• AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.	• AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.
KEY ASSESSMENTS Half term 1: Force and pressure LWQ Waves test Half term 2: Electromagnetic waves LWQ December PPE	KEY ASSESSMENTS Half term 1: Electromagnetism test Half term 2: Light and colour LWQ Space test Easter PPE	KEY ASSESSMENTS
Extended reading suggestions and external resources: KS4 Bitesize Science https://www.bbc.co.uk/bitesize/subjects/zpm6fg8 Oak National Academy Lessons https://classroom.thenational.academy/subjects-by-key-stage/key-stage-4/subjects/physics Chase High Youtube Playlists https://www.youtube.com/channel/UCSK4ImJfi5sPH4UBp7cZtyQ We actively encourage students to read and research about the wider Scientific word- Planet Earth and Perfect Planet both on BBC iPlayer are examples of where students can engage with Science from the safety and comfort of their own homes.		

Curriculum Overview

Subject: Combined Science

Year Group: 11

CHASE HIGH
Aspirations, Character & Excellence

In Year 10 & 11 students complete a carousel of learning across topics in Biology, Chemistry and Physics. Throughout Key Stage 4 (KS4) students will extend the **powerful knowledge** already developed in KS3. Each Lesson has a particular **LORIC** and **Career focus** reflecting the school's improvement plan. The more cognitively challenging topics are scheduled later in the course to allow time for the development of the skills and knowledge to deliver them effectively. Topics are rotated out of sync with Single sciences so that resources are available to all students.

With a focus on Key Concepts, Apparatus and Techniques across all topics students will develop the **subject disciplinary knowledge** needed to scrutinise the world around them and communicate their findings effectively. Students will follow the AQA Combined Science specification and are required to undertake 21 required practical activities developing analytical and rational thought processes through planning, experimentation and reflection. Developing extended science writing through the use of long written questions (LWQ) has been identified as a particular area of development. **Interleaving** questions at the beginning of every lesson allow students to spend time recalling previous learning so that **practise** makes

TERM 1	**TERM 2**	**TERM 3**
KNOWLEDGE/SKILLS **Biology: B11** -Hormonal co-ordination (Diabetes, menstrual cycle, controlling fertility) **B12**- Reproduction (DNA, genome, inheritance, genetic disorders) **B13**- Variation and evolution (Selective breeding, natural selection, genetic engineering) **B14** -Genetics and evolution (Fossils, extinction, classification, resistant bacteria). **Chemistry**: **C6** -Electrolysis **Physics**: **P12** -Electromagnetic waves **P13**- Electromagnetism (Fields, motor effect) Personalised revision generated from question level analysis of Yr 10 PPE	KNOWLEDGE/SKILLS **Chemistry**: **C12**- Earths resources (Potable water, waste water treatment, life cycle assessments, extracting metals) **Physics**: **P10** -Forces and motion (Acceleration, terminal velocity, momentum, extension) **P11** -Wave properties (reflection, refraction, nature of waves) Personalised revision generated from question level analysis of December PPE	KNOWLEDGE/SKILLS Personalised revision generated from question level analysis of Easter PPE

Skills: • AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures. • AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures. • AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.	Skills: • AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures. • AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures. • AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.	Skills: • AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures. • AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures. • AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.
KEY ASSESSMENTS Half term 1: Hormonal coordination LWQ Reproduction test Half term 2: Electromagnetic waves LWQ Electrolysis and Variation for evolution test PPE December exams	KEY ASSESSMENTS Half term 1: Forces and motion LWQ The Earths' resources test PPE Easter Exams	KEY ASSESSMENTS Half term 1: Half term 2: GCSE's
Extended reading suggestions and external resources: KS4 Bitesize Science https://www.bbc.co.uk/bitesize/subjects/zp266yc Oak National Academy Lessons https://classroom.thenational.academy/subjects-by-key-stage/key-stage-4/subjects/combined-science Chase High Youtube Playlists https://www.youtube.com/channel/UCSK4ImJfi5sPH4UBp7cZtyQ We actively encourage students to read and research about the wider Scientific word- Planet Earth and Perfect Planet both on BBC iPlayer are examples of where students can engage with Science from the safety and comfort of their own homes.		