

The Academic Curriculum

The intent of our academic curriculum is to deliver **Powerful Knowledge** to our students. At Creative Education Trust this is not contextualised as ‘the knowledge of the powerful’, but specialised knowledge in a range of subject disciplines. This will include both disciplinary knowledge and substantive knowledge within each area of study. This curriculum is not only designed to endow children with the social assets, skills and cultural capital needed to succeed and achieve, but also to instil in our children the power and confidence to question, synthesise and scrutinise in a range of disciplines, a variety of social contexts and in their own lives. Beyond a range of academic qualifications, the intended impact of this curriculum is for our students to be able to integrate into any social, academic or professional environment, as well as to question, instigate change or lead within those environments.

Below you will find an overview of what Year 10 students are learning in each of their subjects in Half Term 1 and 2 (September-December).

Subject	Autumn Term Topics
English	<p>Half Term 1: A Christmas Carol by Charles Dickens Students will learn to extend their knowledge of prose texts and use the requirements of the exam criteria to be able to produce an evaluative, written response. They will also extend their knowledge of the nuances of impactful descriptive and narrative writing techniques. They will be extending prior knowledge and understanding of texts to identify, understand and analyse how writer’s use:</p> <ul style="list-style-type: none">• Character, structure and setting to communicate their ideas• The context of production and reception over time• Ideas in the texts are contextually linked and shaped by society at the time.• The ability to engage with the text and cross-reference the ideas as a whole to formulate a perceptive and critical argument. <p>Half Term 2: Explorations in creative reading and writing (Language Paper 1) Students will learn to extend their analysis skills by focussing on a range 20th Century Literary Prose and consider the character, themes and ideas presented by the writer. They will also consider how these themes are presented alongside the context. They will also extend their knowledge of the nuances of impactful descriptive and narrative writing techniques. They will be extending prior knowledge and understanding of texts to identify, understand and analyse how writer’s use:</p> <ul style="list-style-type: none">• Narrative voice• Character• Setting and atmosphere• Methods of creating meaning• Context• Language choices• Structural choices

	<ul style="list-style-type: none"> • Critical and evaluative skills • To convey key ideas and themes throughout a text
<p>Maths</p>	<p>Core</p> <ul style="list-style-type: none"> • Two way tables • Frequency Trees • Venn Diagrams • Products of prime factors • Multiples in context <p>Extension</p> <ul style="list-style-type: none"> • Sequences including quadratic and iteration • Percentages • Cumulative Frequency • Histograms • Probability
<p>Science</p>	<p>Biology: Biology: Infection and Response How the concept of health is affected by communicable (infectious) diseases. Pathogens which are microorganisms that cause disease for example viruses, bacteria, fungi and protists can be spread by a variety of methods and infect both animals and plants. We can avoid communicable diseases by reducing contact with pathogens and using the body's natural barriers against them. Once inside the body our immune system is triggered which is usually a strong enough response to destroy the pathogen. range of drugs such as vaccinations have been developed which enhance our body's natural system against pathogens and the use antibiotics from the 1940s have proved successful against a range of lethal diseases. However, the overuse of antibiotics has led to the development of antibiotic-resistant bacteria. Scientists are therefore discovering and developing new drugs through the process of clinical trials with varying levels of success.</p> <p>Cell Biology The study of simple prokaryotic and eukaryotic cells from single-cell structures to organisms and how cells have become specialised. These small structures were first observed with the discovery of light microscopes and further enhanced due to the evolution of electron microscopy and calculations to ascertain actual sizes. A variety of processes are required to transport substances into and out of cells such as diffusion, osmosis and active transport and that exchange surfaces have become adapted to allow rapid exchange.</p>

The cell cycle and mitosis are key processes for cell growth and repair. Stem cells are undifferentiated cells which have the potential to become specialised; this has led to many recent scientific discoveries in plants and animal stem cells although there are emotive evaluative reasons for and against the use of stem cells for medical purposes.

Chemistry:

Chemical Calculations

Chemists use quantitative analysis to determine the formulae of compounds and the equations for reactions. Given this information, analysts can then use quantitative methods to determine the purity of chemical samples and to monitor the yield from chemical reactions. Chemical reactions can be classified in various ways. Identifying different types of chemical reaction allows chemists to make sense of how different chemicals react together, to establish patterns and to make predictions about the behaviour of other chemicals. Chemical equations provide a means of representing chemical reactions and are a key way for chemists to communicate chemical ideas.

Electrolysis

Students are learning that when an ionic compound is melted or dissolved in water, the ions are free to move about within the liquid or solution. These liquids and solutions are able to conduct electricity and are called electrolytes and the ions can be separated by electrolysis. Chemical Calculations Chemists use quantitative analysis to determine the formulae of compounds and the equations for reactions. Given this information, analysts can then use quantitative methods to determine the purity of chemical samples and to monitor the yield from chemical reactions. Chemical reactions can be classified in various ways. Identifying different types of chemical reaction allows chemists to make sense of how different chemicals react together, to establish patterns and to make predictions about the behaviour of other chemicals. Chemical equations provide a means of representing chemical reactions and are a key way for chemists to communicate chemical ideas.

Physics:

Electricity

What electrical charge is and what is needed for it to flow.

The rules for current, potential difference and resistance in series and parallel circuits. Use equations, either singly or in combination with each other to calculate I, V and R.

How resistance changes in ohmic and non ohmic conductors and diodes. Know how to make use of variable resistors such as thermistors and LDRs in circuits and why these circuits work.

To know and use the equations specified in the syllabus

The requirements for Mains UK electricity and the 3 wire system that is used.

How transformers work within the National grid to ensure efficient energy transfer (Triple)

To describe the production of static electricity, and sparking, by rubbing surfaces.

To describe evidence that charged objects exert forces of attraction or repulsion on one another when not in contact

To explain how the transfer of electrons between objects can explain the phenomena of static electricity.

Edexcel: <https://qualifications.pearson.com/content/dam/pdf/GCSE/History/2016/specification-and-sample-assessments/gcse-9-1-history-specification.pdf>

Paper 1 topic: Medicine through time 1250-present

Students will learn to understand key features of Medicine through time c1250-present, including the nature of change in medicine, treatments, preventatives and knowledge of the human anatomy across the time periods. Skills will include analysis of the cause of change, and the extent of progress in each time period.

This will include:

- Sense of Period – Medieval, Renaissance, Industrial Britain, Modern Britain
- Substantive concepts – beliefs, individuals, government, communication, attitudes, technology and science
- Disciplinary concepts –change, continuity, significance, describe, analyse, evaluate, similarity, difference, causation, consequence.
- C1250-c1500 Medicine in Medieval England: Supernatural and religious explanations of the cause of disease. Rational explanations: the Theory of the Four Humours and the miasma theory; the continuing influence in England of Hippocrates and Galen. Approaches to prevention and treatment and their connection with ideas about disease and illness: religious actions, bloodletting and purging, purifying the air, and the use of remedies. New and traditional approaches to hospital care in the thirteenth century. The role of the physician, apothecary and barber surgeon in treatment and care provided within the community and in hospitals, c1250–1500. The Black Death, 1348–49; approaches to treatment and attempts to prevent its spread.
- C1500-1700 Renaissance Medicine: Continuity and change in explanations of the cause of disease and illness. A scientific approach, including the work of Thomas Sydenham in improving diagnosis. The influence of the printing press and the work of the Royal Society on the transmission of ideas. Continuity in approaches to prevention, treatment and care in the community and in hospitals. Change in care and treatment; improvements in medical training and the influence in England of the work of Vesalius. William Harvey and the discovery of the circulation of the blood. Dealing with the Great Plague in London (1665).
- C1700-1900 Medicine in the 18 and 19th centuries: Continuity and change in explanations of the cause of disease and illness. The influence in Britain of Pasteur’s Germ Theory and Koch’s work on microbes. The extent of change in care and treatment: improvements in hospital care and the influence of Nightingale. The impact of anaesthetics and antiseptics on surgery. Jenner and the development of vaccination. The changing role of the government and the Public Health Act (1875). Cholera in London (1854); attempts to prevent its spread; the significance of Snow and the Broad Street pump
- C1900- present Medicine in Modern Britain: The influence of genetic and lifestyle factors on health. Improvements in diagnosis: the impact of the availability of blood tests, scans and monitors. The extent of change in care and treatment. The impact of the NHS and science and technology: improved access to care; advances in medicines, including magic bullets and antibiotics; high-tech medical and surgical treatment in hospitals. Mass vaccinations and government lifestyle campaigns. Fleming, Florey and Chain’s development of penicillin. The fight against lung cancer in the twenty-first century: the use of science and technology in diagnosis and treatment; government action.

History

<p>Geography</p>	<p>Half Term 1 Theme: Paper 1: Climate change and Extreme Weather</p> <p>Students will learn to:</p> <ul style="list-style-type: none"> • Understand Global Atmospheric Circulation • Understand the causes, consequences and management of climate change. • Understand extreme weather in the UK • Know a recent extreme weather event in the UK. <p>Half Term 2 Theme: Paper 1: Rainforests and Hot Deserts</p> <p>Students will learn to understand the:</p> <ul style="list-style-type: none"> • UK small scale ecosystem – interactions between different elements. • Understand the distribution of ecosystems and global biomes • Understand the characteristics of TRF: location, structure, importance, plant and animal adaptation. • Explore a case study of causes and impacts of deforestation in TRF • Students will understand the characteristics of hot deserts: location, importance, plant and animal adaptation. • They will understand how hot environments are being developed and the opportunities and challenges this creates and the risks associated.
<p>RE</p>	<p>In Half term 1</p> <p>Students should be aware that Christianity is one of the diverse religious traditions and beliefs in Great Britain today and that the main religious tradition in Great Britain is Christianity. This knowledge may be applied throughout the assessment of the specified content. Students should study the beliefs, teachings and practices of Christianity specified below and their basis in Christian sources of wisdom and authority. They should be able to refer to scripture and/or sacred texts where appropriate. Some texts are prescribed for study in the content set out below and questions may be set on them. Students may refer to any relevant text in their answers. Students should study the influence of the beliefs, teachings and practices studied on individuals, communities and societies. Common and divergent views within Christianity in the way beliefs and teachings are understood and expressed should be included throughout. Students may refer to a range of different Christian perspectives in their answers including Catholic, Orthodox and Protestant.</p> <p>In Half term 2</p>

	<p>Students will build on the beliefs and teachings of Christians by discovering how these are put into action. Also drawing comparisons between different denominations within Christianity</p>
<p>Citizenship</p>	<p>In the first Citizenship unit Theme A: Living together, students focus on what makes a community. They study all the factors that have contributed to the multicultural society we enjoy today and all the challenges that go along with that.</p> <ul style="list-style-type: none"> • Roots • Religious understanding • Population • Migration • Identity • Respect and communities • Meeting barriers • Discrimination • Mutual understanding • What are human rights? • Human rights in the UK • Political rights • Legal rights • Protecting the customer • Rights with responsibilities + • Human Rights checks and balances • Who represents us? • The council
<p>Spanish</p>	<p>Half Term 1: Holidays Students are learning to describe their holidays and activities. They will be able to describe their holiday using the imperfect tense and any problems they had They are learning to state and justify their opinion of holidays.</p> <p>Students are revising the present and preterite tenses. Students will be introduced to the imperfect tense:</p> <ul style="list-style-type: none"> • Preterite tense • irregular verb hacer, ir • Superlatives • Comparisons • negatives

	<p>Students will learn to use different opinions to add variety to what they say.</p> <p>Half Term 2 Theme: School Students will learn to describe their school, school subjects and activities. They will learn to state and justify their opinion. They will be able to discuss school uniforms, school rules and activities and achievements.</p> <p>Students are revising:</p> <ul style="list-style-type: none"> • Present • Preterite • imperfect tenses • future tense • phrases followed by the infinitive. • Preterite tense: irregular verb hacer, ir <p>Students will learn to use different opinions to add variety to what they say (superlatives, comparisons, negatives)</p>
<p>German</p>	<p>Half term 1: School Students will learn to describe their school subjects, uniform, comparisons with primary school, typical school day, school rules, German school system, school trips and exchanges Grammar:</p> <ul style="list-style-type: none"> • weil, denn, • adjective agreement, • modal verbs- dürfen, müssen <p>Half term 2: Free time Students will learn to describe Leisure activities/ Hobbies, reading habits, music preferences, TV and cinema, sport, celebrations and festivals Grammar:</p> <ul style="list-style-type: none"> • Time- Manner- Place word order, • adverbs of frequency and place, gern/lieber/am liebsten
<p>Computer Science</p>	<p>Half Term 1 Theme: CPU/Memory and Storage/Boolean Logic, Programming Fundamentals Students are learning:</p> <ul style="list-style-type: none"> • The effects on performance of changing common characteristics of a CPU • Characteristics of embedded systems

	<ul style="list-style-type: none"> • Familiarity with a range of different embedded systems • Programming fundamentals • Sequence and selection <p>Half Term 2 Theme: Systems Architecture</p> <p>Students are learning</p> <ul style="list-style-type: none"> • What actions occur at each stage of the FE cycle • The difference between storing data and an address • Why data must be stored in binary format • Familiarity with data units and moving between each • Calculate file sizes of sound, images and text files • Describe common scenarios where compression may be needed • Why computers have primary storage • Key characteristics of RAM and ROM • Why virtual memory may be needed in a system • Why computers have secondary storage • Differences between each type of storage device/medium
<p>Creative iMedia</p>	<p>Students are learning how the following methods contribute to pre-production, including how each is created and why it is needed:</p> <p>Mood boards, mind-maps, visualisation diagrams, storyboards, scripts</p> <p>Students are learning how to effectively plan for pre-production taking into account:</p> <ul style="list-style-type: none"> • The requirements of the client The timescale in which it is to be completed. • A work plan that sets out all the stages that needs to be completed in order to reach the final product. • H Evaluations of primary and secondary sources and how these feed into the overall work plan and final product. • Adapt the final product to the target audience. • Understand the differences between hard ware and software. Choose the appropriate hard ware and software that will enable them to complete the final product. • Understand the health and safety issues surrounding creating the product and create risk assessments to take this into consideration. • Understand current legislation and laws surrounding creating the product ensuring that it is legal and suitable. <p>Students are learning how to produce pre-production documents and successfully reproduce them using the following techniques:</p> <p>File formats, version control, moving images, video formats, graphics formats, audio formats, file structure, making all the pre documents</p>

	<p>Students are learning to evaluate and review the documents created in pre-production to ensure that they meet the criteria and clients' needs. The review and evaluation follow these stages:</p> <ul style="list-style-type: none"> • Review pre-documents • Formats • Style • Clarity • Meet client needs • Identify areas for improvements
IT	<p>Unit 1 Product Life cycle</p> <p>Student will learn how large projects are run in the IT industry and learn about the different stages.</p> <ul style="list-style-type: none"> • Product life cycle • Iterative reviews • Inputs and outputs • Project considerations • Planning tools <p>Unit 2</p> <p>Students will learn about different tools used to plan projects.</p> <ul style="list-style-type: none"> • Project requirements • Design briefs • Gantt and PERT charts • Risks • Project testing <p>Student will also be learning spreadsheets skills throughout the term.</p>
Art	<p>Term 1 Theme: My Space (Formal Elements – observational studies)</p> <p>Students are learning to be able to confidently select relevant secondary sources to produce sensitive, articulate and detailed observational work that demonstrates an embedded knowledge of the formal elements. They will learn to critically analyse artists' work and produce a thought provoking visual analysis in a refined way. Students will be able to exploit the qualities of materials independently and skilfully through experimentation and be able to critically evaluate and articulate the outcomes.</p>

	<p>This term will be mainly focused on research, identifying ideas for the theme and exploring man made and natural subject matter using a variety of mediums.</p>
Graphics	<p>Autumn 1</p> <ul style="list-style-type: none">• Core materials and their working properties• Papers and Boards• Natural and manufactured timbers• Metals and Alloys• Polymers• Textiles <p>NEA focus – Develop drawing and designing skills and a section A focus this half term. Topics covered are below:</p> <ul style="list-style-type: none">• Design ideas in response to a brief• 2-point perspective drawing• Modelling with materials• Client page• Developing design ideas• CAD laser cutting <p>Autumn 2</p> <ul style="list-style-type: none">• Specialist material - deepen understanding of paper and boards• Selection of materials or components• Forces and stresses• Ecological and social footprint• Sources and origins• Using and working with materials• Stock forms, types and sizes• Scales of production• Specialist techniques and processes• Surface treatments and finishes <p>NEA focus – Continuing with NEA skills</p> <ul style="list-style-type: none">• Orthographic drawings• Designs and modelling for children's toy project• Technical drawings

- Polymorph
- Typography
- Evaluating using GCSE criteria
- Christmas decoration using CAD.

Food

Autumn 1

Students will learn to apply knowledge, skills and understanding associated with fruit and vegetables.

- Theory of nutrition to focus on sources, functions, and symptoms of excess & deficiency of water-soluble micronutrients B & C, and micronutrients iron, phosphorus, iodine, sodium
- Denaturation and preservation of water-soluble micronutrients caused by cooking methods / storage techniques.
- Sources, functions, consumption requirements, and symptoms of excess & deficiency of water (fluids).
- Functional and chemical properties to cover the prevention of enzymic browning through use of lemon juice.
- Antioxidant vitamin C, and its role in the prevention of disease and preservation of food quality (oxidation).
- Food safety will consider theory related to the control of enzymic action, and mould and yeast growth e.g. oxidation.
- Discussion of the preservation of food quality via antioxidants (Vitamin C).
- Factors affecting food choice - should consider vegetarianism / veganism and related religious diets (e.g. vegetarianism in Hinduism/Buddhism/Sikhism, and the avoidance of coffee/tea/alcohol in many)
- Food processing - should consider loss of vitamins through processing and subsequent fortification.
- Primary/Secondary processing of plant crops. Secondary processing of fruit into jam.
- The positive and negative aspects of Genetically Modified (GM) foods.
- Seasonality
- Food labelling

NEA focus – developing practical prep and cooking skills. All dishes cooked to contain either fruits or vegetables. Introduction to vegetable cuts, knife safety, health and safety, multitasking and refining medium level skills and cooking methods. The list of dishes that students will be cooking is below:

- Vegetable Soup
- Pineapple Upside-down Cake
- Lemon Curd
- Vegetable Gratin
- Mini Roast Dinner
- Japanese dish - Pancake (okonomiyaki) /Ramen
- NEA 1 - Enzymic browning experiment

Autumn 2

Students will learn to apply knowledge, skills and understanding associated with cereals and cereal products.

- Theory of nutrition to focus on the sources, functions, symptoms of excess & deficiency of macronutrient carbohydrate, and fibre (resistant starch). Differences between complex and simple carbohydrates and their effects on health. Amount of carbohydrate required at varying life-stages.
- Functional and chemical properties to cover gluten formation, gelatinisation, viscosity testing (gels), dextrinization, caramelisation, raising agents (chemical, mechanical, biological, steam)
- Food safety will consider theory related to the use of microorganisms in food production i.e., yeast.
- Factors affecting food choice should consider coeliac disease/gluten sensitivity – symptoms, diabetes treatment, alternatives
- Food processing and production should consider fortification of cereal products, and the primary/secondary processing of cereal crops.
- Environment issues related to packaging. Carbon footprint. Food security.

NEA focus – developing practical prep and cooking skills. All dishes cooked to contain a cereal grain or cereal product. The list of dishes that students will be cooking is below:

- Choux pastry
- Risotto
- Treacle tart
- Fresh pasta tagliatelle
- Gingerbread house
- NEA 1 – viscosity experiment

Engineering

Autumn 1

Students will study

- Health and safety
- Introduction to freehand sketching and Engineering drawings.
- Introduction to shading and light direction when drawing.
- Introduction to technical Engineering techniques – isometric, orthographic, drawing lines.
- Students introduced to the concept of investigating materials.
- Student to select appropriate Engineering equipment.
- Develop skills of workshop routine and safety.
- Shapes and strength of shapes.
- Introduction to the Synoptic Project - Bridge investigation. Students to analyse the brief and research a range of bridge types.

	<p>Autumn 2 Students will study</p> <ul style="list-style-type: none"> • Hand drawings of bridge designs • Construction plans • Practice of modelling techniques • Introduction to simple CAD techniques • Modelling of bridge design using 5mm wood quadrant. • Types of engineering disciplines • Scale drawing • Evaluation and testing techniques in Engineering
PE Core	<p>Students are learning to tackle complex and demanding physical activities. They will get involved in a range of activities that develops personal fitness and promotes an active, healthy lifestyle. Students will be taught to use and develop a variety of tactics and strategies to overcome opponents in team and individual games. They will further develop their technique and improve their performance in other competitive sports. They will take part in a range of environments which present intellectual and physical challenges, which encourage them to work in a team, building on trust and developing skills to solve problems, either individually or as a group. They will evaluate their performances compared to previous ones and demonstrate improvement across a range of physical activities to achieve their personal best.</p>
BTEC Sport	<p>During this term students will study Unit 1: Fitness for Sport and Exercise in preparation for the exam in Term 2. Students develop there knowledge and understand of the following areas:</p> <ul style="list-style-type: none"> • Know about the components of fitness, exercise intensity, the principles of training and additional principles of training. • Explore different fitness training methods • Investigate fitness testing to determine fitness levels
Business Studies	<p>Students will follow the OCR Business Studies GCSE course.</p> <p>Unit 1- Business activity- students will learn about how business set up and basics of how they operate.</p> <ul style="list-style-type: none"> • The role of business and enterprise • Business planning • Business ownership • Aims and objectives • Stake holders • Business growth
	<p>Students are learning to explore different aspects of growth and development across the life stages using the physical, intellectual, emotional and social areas of development (PIES).</p>

<p>Health and Social Care</p>	<p>Students are learning the key aspects of 4 areas of development and the differentiation of the 6 life stages:</p> <ul style="list-style-type: none"> • Infancy (0-2), Childhood (3-8) Adolescence (9-18) • Early adulthood (19-45) • Middle Adulthood (46-65) • Later adulthood (65+) <p>Students will learn the different factors that have affect an individual’s growth and development. For example:</p> <ol style="list-style-type: none"> 1. Discussing how poor housing conditions could affect a person's health and wellbeing 2. Understanding how Dementia can affect a person’s independence and ability to maintain relationships with others
<p>Child Development</p>	<p>Students are learning to understand the principles of growth and development from 0 to 5 years using the physical, intellectual, Language and communication, emotional and social areas of development (PILES).</p> <p>Students will learn how and why growth is measured, the principles of development in the 3 identified age groups</p> <ul style="list-style-type: none"> • 0- 18 months • 18 months to 3 years • 3 years to 5 years <p>Students will learn that children develop skills and abilities at different rates but they usually follow the same pattern. Student will learn the patterns of growth and development across the five areas of development.</p>
<p>Drama</p>	<p>Students are learning the theory and practice of devising techniques, theatre roles and the staging and design elements of a set text</p> <p>Students will:</p> <ul style="list-style-type: none"> • develop an understanding of the text ‘Blood Brothers’ • Be creating non-naturalistic scenes • developing the mapping of ideas • be introduced to Section A of Component 1 of the GCSE– Theatre job roles, staging configurations, technical terminology, stage placements.
<p>Music</p>	<p>Students are beginning to work on two Units for Btec Music.</p> <p>Unit 5 – Students are evaluating their performance skills and beginning to work on improving these through rehearsals and class performances.</p>

	Unit 1 – Students are learning about the Music Industry. We are focussing on Learning Aim A – Organisations in the Industry.
Ethics	<p>We spend the autumn term exploring classical philosophy. Philosophy is the study of knowledge. It simple means love of knowledge and during this unit we introduce the pupils to what studying philosophy and ethics or Religious education at A level or university could be like. We cover:</p> <ul style="list-style-type: none">• The existence of God – considering our Calander pivots around the teaching of a middle eastern Jew two thousand years ago, the existence of God is a question we all must consider at some point in our lives.• We consider why it is that the majority of human beings on the planet believe in a higher power and consider whether we think their reasons are plausible.• We ask the question - 'Who decides what is right and wrong and where do they come from?' We evaluate utilitarianism which suggests that the thing that brings the most happiness is always the morally correct option. But is it that easy?