
YEAR 8 COURSE INFORMATION

Mullauna College



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Year 8 COURSE ORGANISATION

The Year 8 program includes a combination of core subjects and elective subjects.

Subject	Periods per week
English	4
German	3
Health & Physical Education	2
Humanities	4
Mathematics	5
Science	3
Sport	2
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Elective Subjects

In 2019, Mullauna College students will be undertaking combined Year 8 and 9 Elective subjects. This will enable students to select from a wider variety of subject choices. Over the course of the 2 years students will select 8 elective subjects from the list below. Students may not undertake the same elective twice.

Year 8 Electives

In Year 8, students will undertake 2 elective subjects each semester from the list below. Year 8 students are required to complete any 2 elective subjects from the Performing Arts, Technology or Visual Arts electives. The remaining 2 elective choices can be selected from any of the subjects listed below.

Each elective subject will be timetabled for 3 periods per week. Please note elective subjects will only run if selected by enough students.

2019 Elective List:

General:

Creative Writing, Forensic Science, Invent and Learn, Sport Science

Performing Arts:

Excel Instrumental, Lights, Camera & Action, Music FM, Musical Performance Masterclass

Technology:

Animation and Games Programming, Food and Culture, Food for Life, Robotics

Visual Arts:

2D Art (Draw, Paint, Print), 3D Art (Ceramics & Sculpture), 3D Drawing & Design, Creative Media, Filmmaking, Graphic Design

Excel Program

A program for High Achievers' operates in Years 8. Excel Language for High Performing English students and Excel Logic for high performing Mathematics students.

Year 8 Challenge has a focus on our relationship with technology and includes the following focus areas:

- **iEngage:** students study the ethical use of technology
- **iCreate:** students create a digital story that provides instructional advice on the safe and ethical use of technology
- **iExplore:** Students will explore how technology will shape their future. They will collaborate to produce a website on their predictions for their world in the year 2050
- **iLead:** Students will create and deliver workshops for other students on an aspect of technology.

ASSESSMENT

There are three modes of assessment at Year 8.

1. Assessment Tasks

A grade will be awarded for specific tasks and projects. The grades indicate how well the student is performing in these areas of the unit.

Assessment tasks can include major projects, topic tests, written reports, oral presentations and folios. Each subject will complete a minimum of 3 assessment tasks each semester. A grade will be awarded for each task.

To satisfactorily complete a unit, a student must:

- a. Complete all assessment tasks.
- b. Obtain a grade less than **P** in no more than one assessment task.

2. Level of Achievement against Statewide Learning Standards

In 2019, Mullauna College will be assessing to the Victorian Curriculum standards. This framework identifies eight learning areas and four general capabilities for the Prep to Year 10 curriculum. The Learning Areas describe distinct disciplines, while the capabilities represent knowledge and skills that are developed and applied across the curriculum.

The Victorian Curriculum includes standards at ten levels. The level broadly associated with schooling at Year 8 is Level 8.

Student achievement will be reported against the achievement standards indicating the level of attainment reached by each student and the age expected level of attainment.

3. Work Habits

Students are assessed in the Work Habits of Effort, Class Behaviour and Organisation

HOMEWORK

Home study reinforces the development of skills in organisation, planning and self-management that are crucial in assisting students to become independent learners.

It is expected that students in Years 8 will complete a minimum of 5 to 6 hours homework per week.

Students should set aside regular times in the week that will best suit their schedule of activities. This time should be used to ensure that all required work (set homework, incomplete classwork, assignments, and test revision) is completed and submitted for assessment by the due date. Mathematics and Language require regular practice, and, for English, it is essential that the reading of set texts and independently selected books is a nightly practice.

A **Student Homework and Study Planner** is provided for each student to facilitate the recording, organisation and management of homework. Parents can assist this process by regularly checking that homework has been recorded.

This **Course Information Booklet** should be kept in a safe place for reference throughout the year. Like the Planner, it assists students in monitoring their progress

CORE SUBJECTS

The following section provides information on core subjects:

ENGLISH

Overview

Content

Students strengthen and expand their reading and writing skills, and extend their ability to speak and listen effectively. Students will study the craft of writing, and read and view a variety of texts that explore ideas and information related to familiar and more challenging topics, themes and issues. Students also take part in oral language activities, presenting their ideas and information in a variety of ways. They are encouraged to take responsibility for their learning and develop their skills as independent learners.

Key Skills

On completion of this course students are able to:

- Produce, in print and electronic forms, writing for a variety of purposes;
- Read and view imaginative, informative and persuasive texts;
- Produce a range of responses, including interpretive pieces and personal reflections;
- Present creative, informative or persuasive responses to texts, themes and issues, as individuals or in groups;
- Ask clarifying questions and build on the ideas of others.

Assessment Tasks

- **Text response:** a minimum of three texts studied and relevant assessment activities completed.
- **Wide reading:** a minimum of three texts and associated responses.
- **Writing:** a variety of writing tasks for different purposes and audiences.
- **Oral presentation:** a minimum of one oral activity per semester.
- **Examination:** an examination at the end of the year.

ENGLISH AS AN ADDITIONAL LANGUAGE (EAL)

EAL students are a highly diverse group, of different ages, at different stages of learning English, from differing first-language backgrounds and with varying amounts of education in their first language. The subject EAL accommodates this by providing English language development within a set of standards describing expectations for EAL learners. The secondary stages (Year 7-10) of EAL learning are described as S1, S2, S3 and S4, and provide a set of practical, observable ways in which students are likely to demonstrate their achievements in English language learning.

This subject will run on a needs basis.

HEALTH AND PHYSICAL EDUCATION

Overview

Content

Health and Physical Education provides students with knowledge, skills and behaviours to enable them to develop and maintain their physical, mental and social health. Students proficiently perform complex movement and skills. They measure their own fitness and physical activity levels and identify factors that influence motivation to be physically active. Students maintain regular participation in moderate to vigorous physical activity and analyse and evaluate their level of involvement. They combine motor skills, strategic thinking and tactical knowledge to improve individual and team performance. Students describe the physical, mental and social changes that occur as a result of the youth stage of the lifespan and the factors that influence their own development.

Key Skills

On completion of this course students are able to:

- Develop proficient motor skills, which are appropriate to specific games, activities and sports;
- Describe initiatives and motivational influences that affect participation in physical activity;
- Identify outcomes of risk taking behaviours;
- Analyse a range of influences on food selection;
- Identify major nutritional needs for growth and activity;
- Describe health issues about which young people make decisions, and strategies that are designed to maintain or improve their health;
- Describe health resources, products and services available to individuals and groups in Australia and consider how they could be used to improve health.

Assessment Tasks

- **Skill execution:** ability to perform complex movement and manipulative skills.
- **Game Sense:** ability to combine motor skills, strategic thinking and tactical knowledge.
- **Written Health Work:** a minimum of one piece for each Health unit.

SPORT EDUCATION

Overview

Content

Sport Education provides students with knowledge, skills and behaviours to enable them to be lifelong participants in physical activity. Emphasis is on combining motor skills and tactical knowledge to improve individual and team performance. Engaging in sport contributes to a sense of community and social connectedness, thus improving wellbeing.

Students select a different sport each term to participate in and have the opportunity to represent the college in interschool competition.

Key Skills

On completion of this course students are able to:

- Perform complex movement patterns that form part of team games
- Analyse strategies and tactics used in team games
- Explain the rules, player positions and roles associated with sports
- Use equipment safely and confidently
- Identify a variety of roles in sports such as umpire, scorer, coach, player, captain, team member, spectator and administrator and assume responsibility for the organisation of aspects of a sporting competition

Assessment Tasks

- **Activity Level:** participation level in moderate to vigorous activities.
- **Game Sense:** ability to combine motor skills, strategic thinking and tactical knowledge.

HUMANITIES

Overview

Content

Students will study human progress and how people have organised themselves into societies over time, as well as how they have interacted with their physical environments. Topics at Year 8 can include consumer rights, globalization, landforms, laws, constitutional change and taking part in the election process, Vikings, medieval history and the exploration of South America or Japan.

Key Skills

On completion of the courses at Year 8, students are able to:

- Describe and analyse the social and political features of medieval societies, then compare them with the modern world;
- Explore key concepts of democracy, law and justice;
- Analyse and evaluate geographical information from a range of sources;
- Compare the impact of globalization in Australia and the world;
- Explain how natural processes and human activities change environments, and develop a plan to address the impact of change;
- Identify and discuss decisions made about allocating resources when producing goods and services;
- Discuss key factors in work opportunities and factors affecting the Australian economy.

Assessment Tasks

- **Practical exercises:** exercises based upon the collection, presentation and analysis of data and graphic materials
- **Research report/s:** a research task/s on a selected topic/s
- **Tests:** a series of short tests examining the coursework.
- **Exam:** (semester 2 only)

GERMAN

Overview

Content

Students learn that there are similarities and differences between languages, and how German and English are related. There is an important emphasis on how the language works, so that students achieve an understanding of the structure of German as well as their own language.

Students participate in activities where they practise exchanging simple personal information on topics such as self, friends, family, time, school, likes, dislikes, foods, daily routines and pastimes. They talk about themselves in response to questions, and learn to ask questions. They begin to write short paragraphs, initially based on models and on memorized sequences, eventually developing independence. Students learn to use print and electronic resources, such as dictionaries, CDs, PC apps, and online learning resources. They start to listen, read, speak and write in the new language, concentrating on authentic language use within defined topics and contexts.

Key Skills

On completion of this course students are able to:

- Introduce themselves, greet and farewell others;
- Exchange simple information on topics such as daily routines and above mentioned aspects of their world;
- Respond to simple questions, and ask questions themselves;
- Demonstrate knowledge and application of the German sound system in writing, listening, reading and speaking;
- Read short passages for meaning;
- Express themselves through writing, in print and electronic form, by generating original sentences which may be linked to form paragraphs;
- Understand the content of simple spoken texts.

Assessment Tasks

- **Written work:** a variety of written exercises including two pieces of creative writing.
- **Text response:** oral and written responses to text and spoken material.
- **Reading:** texts studied and relevant questions answered.
- **Conversation:** participation in role-play activities.

MATHEMATICS

Overview

Content

Students will investigate ways in which mathematics is used to represent and explain aspects of the world. They will work mathematically to enhance their knowledge of space, measurement, chance and data. Students will be introduced to algebraic expression and its ability to explain real life situations. They will work collaboratively to solve mathematical problems.

Key Skills

On completion of this course students are able to:

- Use a range of mathematical techniques to solve mathematical problems;
- Communicate their understanding using correct mathematical language and notation;
- Problem solve by employing a variety of strategies;
- Define key mathematical concepts;
- Select appropriate technologies as an integral part of their mathematical activities.

Assessment Tasks

- **Tests:** tests within each topic.
- **Projects:** a range of mathematical investigations.
- **Analytical tasks:** a range of in depth analysis tasks.
- **Examination:** an examination at the end of the year.

SCIENCE

Overview

Content

Students will cover topics including cells, body systems, atomic structures, introduction to chemistry, transferring energy, geology and mining for resources. Students explore scientific ideas through investigations, research and experiments. They collect data, analyse information and discuss evidence to suggest solutions to individual questions and scientific ideas.

Key Skills

On completion of this course students are able to:

- Demonstrate safe and technical use of a range of instruments and chemicals;
- Make predictions and propose explanations drawing on evidence from their experiments;
- Understand the organization of the body's systems in terms of flow of matter between organs;
- Identify the difference between elements, compounds and mixtures that can be described at a particle level;
- Describe the different energies transferring through an object as an event occurs;
- Understand chemical changes involved in reactions that form new substances;
- Describe the constantly changing Earth through identification of rock types and geological process over time.

Assessment Tasks

- **Tests:** a range of topic tests at the end of each unit
- **Projects:** major projects including research and/or analysis each semester
- **Practical reports:** written reports, based on experiments and practical activities in class

ELECTIVE SUBJECTS

The following section provides information on elective subjects:

Visual Arts

2D ART – Draw, Paint, Print

Overview

Content

Students will explore a variety of art materials and learn skills in drawing, painting and printmaking. They will learn new techniques in drawing and apply the skills in a variety of interesting topics involving acrylic painting and printmaking. They will apply the design elements and principles of art to create individual art pieces. Research will also accompany the practical component of the course.

Key Skills

On completion of this course students are able to:

- Use a range of ideas to create artworks and develop a personal style;
- Explore themes, issues and ideas when making and presenting artworks;
- Use a range of 2D materials and techniques;
- Analyse and interpret the work of a range of artists and their artworks;
- Use appropriate art terminology.

Assessment Tasks

- **Drawing Task:** completion of a drawing task which shows development in observational drawing skills, including the application of tonal rendering
- **Painting Task:** a painting composition designed in a specific style that demonstrates an ability to mix and apply paint using a range of techniques
- **Written Presentations:** written reports based on research into a set topic to be supported by visual materials

3D ART – Ceramics and Sculpture

Overview

Content

Students will explore a variety of 3D art materials such as clay and other mediums. Students will learn to design and create 3-dimensional artworks using clay. Construction, glazing and firing techniques will be taught. Other materials such as wire and mixed media will be explored to create interesting sculptures. They will apply the design elements and principles of art to create individual art pieces. Research of a variety of sculptors will also accompany the practical component of the course.

Key Skills

On completion of this course students are able to:

- Use a range of ideas to create 3D artworks and develop a personal style;
- Explore themes, issues and ideas when making and presenting artworks;
- Use a range of 3D materials and techniques;
- Analyse and interpret the work of a range of artists and their artworks;
- Use appropriate art terminology.

Assessment Tasks

- **Ceramic Sculpture:** completion of a clay sculpture with relevant design process
- **Major Sculpture:** completion of a sculpture using a range of materials, with relevant design process
- **Written Presentations:** written reports based on research into a set topic to be supported by visual material

3D DRAWING AND DESIGN

Overview

Content

Students will undertake creative tasks exploring product design, interior design and architecture. They will apply the design process to develop designs to suit specific purposes and audiences. Students will explore technical and freehand drawing methods to communicate their ideas and use both digital and manual techniques to present their final designs. The work of other designers will be analysed through theory tasks.

Key Skills

On completion of this course students are able to:

- Apply technical drawing skills
- Demonstrate freehand drawing and rendering skills
- Apply the design process to develop 3D designs suitable for a set purpose
- Use both digital and manual techniques to present final designs
- Analyse examples of visual communications

Assessment Tasks

- **Environmental Design Task:** completion of environmental design task, including all relevant development work.
- **Industrial Design Task:** completion of industrial design task, including all relevant development work.
- **Written Presentation:** a written report, completed individually.
- **Examination:** students will undertake an examination at the end of the semester

GRAPHIC DESIGN

Overview

Content

Students will undertake a range of creative tasks exploring the way graphic design uses images and type to communicate messages and ideas. They will apply the design process to develop designs to suit specific purposes and audiences. Students will consider the use of design elements and principles, typography and layout to develop design ideas. They will use both manual and digital methods to present final designs. The work of other designers will be analysed through theory tasks.

Key Skills

On completion of this course students are able to:

- Demonstrate freehand drawing and rendering skills;
- Apply the design process to develop graphic designs suitable for a set purpose;
- Create effective design layouts;
- Use both digital and manual techniques to develop and present final designs;
- Analyse examples of visual communications.

Assessment Tasks

- **Design Process Task:** completion of a graphic design task, including all relevant development work.
- **Type in Design:** folio of design tasks focusing on the application of type, including all relevant development work
- **Written Presentation:** a written report, completed individually.

CREATIVE MEDIA

Overview

Content

Students develop media production skills and enhance their understanding of the different forms of media, such as video and photography. They learn how to operate equipment and master techniques to enhance their creativity. They produce a series of short production exercises (Five Shot film, Re-dub Sound Design and Photo Manipulation tasks). Students work together to produce a creative media product for an intended purpose and audience (Music video or Film Trailer).

Key skills

On completion of this course, students are able to:

- Follow media practices and employ creative media techniques;
- Plan and produce a range of creative media products;
- Use a range of media equipment, such as DSLR and video cameras
- Use a range of applications, such as Final Cut and Photoshop
- Use appropriate media terminology;
- Integrate practical work with theoretical concepts.

Assessment tasks

- **Creative Media Production:** a series of media productions
- **Media Production Design:** a written and visual plan for creative media productions
- **Analysis response:** a written response to media texts.

FILMMAKING

Overview

Content

Students develop filmmaking skills through a series of practical workshops and tasks. They learn how to structure, plan, shoot and edit short videos and films. Students learn how to operate DSLR and video cameras. They also learn lighting techniques, shot composition, how to record sound, and edit using Final Cut.

Key skills

On completion of this course, students are able to:

- Structure and plan short films and videos;
- Capture video and sound using professional filmmaking techniques;
- Use a range of media equipment, such as DSLR and video cameras;
- Use a range of editing applications, such as Final Cut.

Assessment tasks

- **Individual Production:** a series of production exercises
- **Film Production:** Short films and videos.
- **Media Production Design:** a written and visual plan for film production.

Performing Arts

MUSIC – Excel Instrumental

Overview

Content

This subject is aimed at students who already learn an instrument (not necessarily within the College) and are seeking an accelerated experience of music making. This subject is highly performance and rehearsal based. Students will explore a number of styles of music in solo and group situations.

Key Skills

On completion of this course students are able to:

- Present solo and group performances
- Work in a team in collaborative manner
- Display characteristic traits of a range of music styles
- Translate theoretical concepts to performance practice
- Develop independence and organisation skills

Assessment Tasks

- **Solo Performance:** presentation of a solo technical piece.
- **Class Performance:** presentation of a collaborative whole class performance.
- **Assignment:** on an influential performer of your own instrument.
- **Musical Theory:** students will present a workbook of theoretical work and undertake aural and theory tests as new skills are mastered.

MUSIC – Music Excel Performance Masterclass

Overview

Content

This subject teaches the translation of theoretical musical concepts and knowledge into advanced performance skills through a practical based program. It is specifically designed for students who already play an instrument. Students will explore different performance techniques and the elements of preparing and critically reviewing concert performances.

Key Skills

On completion of this course students are able to:

- Prepare and Present performances independently
- Display effective teamwork and leadership skills
- Analyse and interpret theoretical concepts of music through performance
- Use appropriate musical terms
- Develop time management and presentation styles as a pathway to VCE

Assessment Tasks

- **Solo Performance:** perform a solo work at a masterclass performance session at the end of the semester.
- **Small Group Performance:** present a series of small group performances and associated tasks.
- **Event management:** organising and evaluating a concert.
- **Review writing:** A series of exercises on the skills of critically commenting on performance.

DRAMA – Lights, Camera, Action

Overview

Content

This unit has been designed to help train young actors who aspire to perform both on the stage and in front of the camera. It will help students to develop their technique in acting through learning the basic performance skills of body language, mime, voice and improvisation. This will culminate in the presentation of a performance in front of the camera.

Key Skills

On completion of this course students are able to:

- Understand theatre styles including naturalism and the techniques required to present these styles.
- Use improvisation to develop a variety of dramas around specific themes and from a range of stimuli
- Understand the processes of production and performance within the film and TV industry.
- Build a performance using theatrical conventions and dramatic elements as stimuli for a recorded performance.

Assessment Tasks

- **Performance and class participation:** devised performances presented in class.
- **Group performance:** presented in a digital format to an audience.
- **Script & Folio:** to accompany digital performance

PERFORMING ARTS – Music FM

Overview

Content

Using the students favorite radio stations for inspiration and their individual music or acting skills students will create their very own live radio show. The style of the final performance piece will vary with the skills of the students who choose this subject. We will look at elements that could go into a radio show such as script writing of broadcast information, news presentations, voice overs talk back and advertising. Technical elements including microphones and sound system components and the performance elements of arranging and performing your favorite songs live in your own band.

Key Skills

On completion of this course students are able to:

- Use technology to amplify and record.
- Explore the elements in the modern radio format.
- Create successful performances in a variety of settings, which can include music or acting.
- Work in a team in collaborative manner.
- Develop creative ideas and independence.

Assessment Tasks

- **Programming:** working as a team to develop and design a program for the end production
- **Radio Show Production:** implementation of practical skills and techniques in producing a show to present.
- **Written Presentation:** A folio containing the documentation of class notes, theoretical background, process writing, rehearsal notes and reflections of putting the radio show together.

Technology

ANIMATION AND GAMES PROGRAMMING

Overview

Content

Students learn the 12 Principles of Animation to create an engaging animated story which incorporates the 12 Principles of Animation. Students show their skill in using *Adobe Flash* to create an animation. Students also learn to code a range of games in *Actionscript 3.0*, such as a drag-drop game, a jigsaw puzzle, Flappy Bird or a hidden object game.

Key Skills

On completion of this course students are able to develop:

- Realistic animations demonstrating the 12 Principles of Animation
- Create a range of Flash games.

Assessment Task:

- Animation Project
- Animation Folio
- Game Folios

ROBOTICS

Overview

Content

Students will experience building and design tasks as well as an introduction to programming. Programmable equipment along with student friendly programming software will be used to teach students about the difference between a machine and a robot, viable building designs and how to master programming by manipulating a flow chart screen. Students will design and build a range of machines that use gears, motors and pneumatics that can fulfill certain task requirements. Students will learn how to use programming software to write short programs that can be loaded on to the Ev3 (command centre) on their robot. They will manipulate motors, light sensors, sound sensors and any attachments they create for their robot. The robots will be under the students' full control and will be programmed to compete a range of complex tasks from acting as dodgem cars to moving through mazes and dancing to music!

Key Skills

On completion of this course students are able to:

- Identify key differences between a machine and a robot;
- Follow instructional building guides to successfully build a range of Lego machines;
- Use their own innovation to design new machines to fulfill certain tasks;
- Write basic programs that manipulate moving parts of their robot;
- Edit complicated programs to allow their robot to compete a multitude of tasks.

Assessment Tasks

- **Folio of Practical Work:** completion of a range of building tasks along with reflections and written work on each piece
- **Assignments:** multiple individual written tasks incorporating research and analysis
- **Practical Tests:** students demonstrate abilities in efficient and effective programming during challenges

FOOD AND CULTURE

Overview

Content

Students will explore a wide range of factors that influence food and culture. They will discover how the Indigenous people of Australia successfully lived off the land. Students will also explore how immigration and lifestyle changes over generations have shaped Australian cuisine. A global perspective is also examined when students research the cuisine of a chosen country. During both theory and practical classes, students will develop an understanding of different cooking techniques and ingredients.

Key Skills

On completion of this course students are able to:

- Investigate, analyse and select from a range of materials, components, tools, equipment and processes to develop design ideas;
- Generate, develop, test and communicate design ideas, plans and processes for various audiences;
- Effectively and safely use materials, tools and equipment;
- Independently develop criteria for success to assess design ideas and processes;
- Use organizational strategies when working individually and collaboratively.

Assessment Tasks

- **Research Report:** a research report on a chosen country that highlights how that country's cuisine has been shaped.
- **Project:** a project based on the design process.
- **Bookwork:** an accurate and organized workbook.
- **Production:** prepare sweet and savoury dishes using a wide range of skills and techniques.

FOOD FOR LIFE

Overview

Content

Students will explore a wide range of topics including: health and nutrition, factors influencing food choices, healthy alternatives, ethical and sustainable food production, product development, marketing and reading food labels. They will consider the role that food plays in a social context and how it relates to every day life.

Key Skills

On completion of this course students are able to:

- Investigate, analyse and select from a range of materials, components, tools, equipment and processes to develop design ideas;
- Generate, develop, test and communicate design ideas, plans and processes for various audiences;
- Effectively and safely use materials, tools and equipment;
- Independently develop criteria for success to assess design ideas and processes;
- Use organizational strategies when working individually and collaboratively.

Assessment Tasks

- **Research Report:** a research report on a relevant topic.
- **Project:** a project based on the design process.
- **Bookwork:** an accurate and organized workbook.
- **Production:** prepare sweet and savoury dishes using a wide range of skills and techniques.

Additional/General

CREATIVE WRITING

Overview

Content

Students will examine writing as a craft, and explore the process by which good writing is produced. Students will build the specific skills required to write in a number of genres and forms. They will engage in the different steps involved in the writing process and learn to employ a variety of strategies to engage their target audience.

Key Skills

On completion of this course students are able to:

- Write in a range of styles, forms, and genres;
- Use a range of literary devices;
- Understand the important elements of narrative writing;
- Develop an individual style and voice;
- Use a range of software, including word processing programs, to create, edit and publish texts imaginatively.

Assessment Tasks

- **Writing pieces:** a variety of writing pieces in different genres and forms
- **Writing Folio:** completion of various skills building activities and reflections
- **Written Presentation:** a published work using an elected software to a target audience

FORENSIC SCIENCE

Overview

Content

Students will apply scientific knowledge and techniques to investigate aspects of forensic science. This will include the collection and examination of physical evidence and identifying victims. They will engage in a range of practical activities to analyse evidence to solve a murder case.

Key Skills

On completion of this course students are able to:

- Explain how science inquiry skills are used to investigate and evaluate evidence;
- Formulate their own hypotheses and conduct investigations in order to prove or disprove them;
- Distinguish between circumstantial forensics evidence and definitive evidence.

Assessment Tasks

- **Projects:** two major research and investigation tasks
- **Practical Reports:** accurate results and analysis for experiments
- **Case Study:** investigation and problem solving task

INVENT AND LEARN

Overview

Content

In this unit, students will undertake a variety of design challenges, requiring creativity and innovative thinking. Exciting real world challenges and problems will be explored and students will create solutions using a variety of robotics, electronics, materials and programming. Invention and engineering will be crucial as students tinker with ideas and test prototypes.

Key Skills

On completion of this course students are able to:

- Develop and explore inquiry questions
- Conduct extensive research using a variety of sources
- Create models and 3D prototypes and presentations
- Apply problem solving skills

Assessment Tasks

- **Creative Design:** students work in groups to construct a project to suit a specific purpose
- **Design Solution:** using a range of equipment and materials (including electronics and computer programming software) students experiment to engineer a design solution
- **Project Management:** students undertake the design process to produce and evaluate an innovative solution to a set problem

SPORTS SCIENCE

Overview

Content

Students will gain insight into science as a human activity and the relationship between science, technology and sport. This will develop students understanding of the body systems and their functions in sporting activities as well as external factors that can influence sporting ability.

Students will investigate a range of the following concepts: body movement, biomechanics, careers in sport science, sports medicine and drugs in sport, sports psychology and the evolution of sporting equipment and clothing.

Key Skills

On completion of this course students are able to:

- Explain the internal systems of the body that allow for active movement;
- Evaluate their aerobic capacity in relation to their cardiovascular system and their fitness;
- Utilise a range of technologies and experimental processes to analyse data;
- Discuss the short and long term effects of natural and synthetic drugs in sport;
- Evaluate scientific developments in sporting equipment and clothing to predict future designs and materials.

Assessment Tasks

- **Topic Tests:** written tests on key concepts studied in each topic
- **Practical Reports:** written report in correct experimental format
- **Projects:** major projects including research and analysis