Curriculum

Years 7 to 10

Version 0.1

Schoolhouse

This document is a work in progress, in line with the principles of design thinking (one of the 'ways of thinking' embedded in the curriculum, p.9). It represents a first iteration of the Schoolhouse curriculum. This will evolve in response to the conversations before it is implemented, and then will continue to evolve as we learn through its implementation.

We'd like to thank everyone who has already contributed their ideas, opinions and feedback so far. Special mention is due to Dr. Nikki Brunker, Peter Hutton, Paul Whitehead, Barbara Stone and the team at Education Changemakers.

We invite you to participate in the continuing evolution of this curriculum. You can view and contribute to it at...
www.schoolhouse.edu.au/opencurriculum

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Schoolhouse

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Education doesn't need to be **reformed**,

The past century has been marked by an exponential increase in the pace of societal and technological change. While we find this daunting, it is worth realising that **the pace of change will never be this slow again**. This is of considerable concern to all of us, but is crucially important to young people. They will inherit a future that is complex, dynamic, and often ambiguous.

it needs to be **transformed.**

Sir Ken Robinson

In recent years there has been increasing recognition that despite the significant and rapid change around us **there has been only incremental and glacial change to the way we educate**. Employers struggle with graduates who lack initiative and autonomy. We face unemployment and underemployment, despite ever-growing participation in tertiary education. Incidence of mental health concerns among the young continues to rise, a symptom of growing unrest and disconnection.

For many educators and policymakers, the answer seems to be more of the same - improving **a broken model of education** with more testing and greater rigour. As part of a growing movement for dramatic educational change, we disagree. We don't need to improve the old model, **we need to explore profoundly new ways of doing things**.

SOURCES OF INSPIRATION

HTH Project

HTH Project

The approach to teaching Years 7 to 10 laid out here has been inspired by many sources. It owes a debt to the work of great educational thinkers including **John Dewey**, **Lev Vygotsky**, **Jerome Bruner** and **Paulo Freire**. It would also not have come about without more recent advocates for educational change such as **Sir Ken Robinson**, **Tony Wagner**, **Andy Hargreaves** and **Richard Gerver.**

In mapping what modern schooling should be striving towards, we have been influenced in particular by the work of the **Partnership for 21st Century Skills**; **UNESCO's** four pillars of learning; the **International Baccalaureate Organisation's** learner profile; and **Howard Gardner's** work on multiple intelligences.

Perhaps more important that any of these sources of inspiration are the real-world role models that demonstrate what can be done to change education. While much of contemporary schooling is increasingly calcified and archaic, there are educators around the world who are exploring new, innovative models. They range from the ecological perspective of the **Green School** in Bali to the play-based approach of **Quest2Learn**; from the vocational authenticity of **Big Picture Learning** in Rhode Island to the creative experimentation of the **Blue School** in New York.

Two schools that have provided particular inspiration to the Schoolhouse curriculum model have been High Tech High in California and Templestowe College in Melbourne.

TC Campus

TC Campus

High Tech High (HTH) now operates across multiple US geographies and different levels of education. Opened in 2000, it provides a proven model for a new school experience much more aligned with the needs of today's students.

At the heart of the HTH model are interdisciplinary, collaborative, term-long projects. These are developed by multidisciplinary teams of teachers, and culminate in public exhibitions. Critical to the success of this model are the extensive use of whole-class discussions; simplified block timetables and an absence of bells; teachers empowered as curriculum designers; individualised learning where students pursue projects of interest; and blended learning approaches that combine online content with face-to-face conversations.

Closer to home, **Templestowe College** (TC) is another concrete example of a radical departure from traditional high school. With a fundamental commitment to student empowerment and student-centred learning, TC creates individualised learning plans for each student. This allows students to progress at their own pace, choosing subjects that reflect their passions and interests. The result is a highly personalised and immersive environment which delivers exceptional levels of engagement.

Schools like HTH and TC not only suggest some of the specific ways in which we can transform education to be more relevant for young people, they also demonstrate that truly revolutionary new ways of schooling are possible.

A Curriculum for Life

The heart of any school is the learning experiences that take place in and around the classroom. Different learning experiences reflect different approaches to education.

The Schoolhouse curriculum lays out a new approach to teaching Years 7 to 10. It aligns with **NSW Syllabus outcomes** and the **Australian Curriculum**, but is dramatically different from other schools in how the day is structured, and how material is learned. Rather than subjects, this curriculum is organised into discrete **term-long 'courses', which integrate elements from different subjects**, as well as material beyond the government syllabuses.

Our objective in writing this curriculum was simple: **to create a school experience that prepares students for a productive and rewarding life**.

Our conception of life is a holistic one, encompassing three different realms;

- **Personal** - our own inner wellbeing,
- **Professional** - our participation in the workforce, entrepreneurship, and creative pursuits, and
- **Social** - our relationships with others, from our family and friends to the wider community and society as a whole.

To prepare them for a productive and rewarding life across these realms we need to equip students not only with knowledge, but with a set of powerful, flexible skills. The eight skills that sit at the heart of our approach combine the much touted **'twenty first century skills'** with the components of **emotional intelligence** identified by Daniel Goleman.

- **Critical thinking**
- **Creativity**
- **Collaboration**
- **Communication**
- **Self-awareness**
- **Self-regulation**
- **Motivation**
- **Empathy**

Drawing on material from the eight key learning areas that constitute the NSW Syllabuses, our curriculum is made up of a set of fifty-two distinct courses which focus on building these eight skills. The result is a set of learning experiences that prepare students for a productive and rewarding personal, professional and social life.


Personal Life
Professional Life
Social Life
Life Skills
CRITICAL THINKING
CREATIVITY
COLLABORATION
COMMUNICATION
SELF-AWARENESS
SELF-REGULATION
MOTIVATION
EMPATHY
ENGLISH
MATHEMATICS
SCIENCE
TECHNOLOGIES
CREATIVE ARTS
HSIE
PDHPE
LANGUAGES
Learning Areas

Ways of Thinking and Learning

Two of the most important ways that this approach differs from a typical high school are in the frameworks used to help students think, and the activities used to help them learn.

The way students learn varies from one individual to another, and from course to course, but there are three principle **ways of learning** that make up much of the day-to-day activity for students in this approach.

A significant part of the time in most courses is spent **working on projects**, individually or in groups. This includes planning, ideating, creating, testing, documenting - whatever students need to do to make their project a reality.

Project-based learning provides many benefits. It is often interdisciplinary, giving students the opportunity to see different bodies of disciplinary knowledge working together rather than divided into discrete subjects. Projects usually involve working together to achieve a shared outcome - this gives them the chance to develop skills in collaboration, leadership and communication. Projects also require students to plan ahead, to manage their time, to be resourceful, to be flexible, and often to negotiate with other stakeholders - all important life skills.

While many of these benefits lie outside of a given syllabus, projects also provide the stimulus to engage with disciplinary knowledge and skills. This learning is often deeper than in a traditional non-project based pedagogy, as it is relevant, contextual and authentic.

The second way of learning is through **discussions**. These are facilitated by teachers, but are open, shared conversations with students playing a key role in driving the discussion. Sometimes they will involve the whole class, but in many cases teachers will divide the class into two or three groups, and hold discussions with one group while others are engaged in independent study or project work.

The last way of learning is **independent study**, where students work individually or in small, informal groups. There is a wealth of high quality digital content available that covers much of the high school curriculum - from sources like the BBC, the Khan Academy, and MIT OpenCourseWare. This content replaces traditional 'teacher in front of the class' lectures. Unlike in the popular 'flipped classroom' model where students are expected to watch this content at home, our model provides time within courses to engage with this content, but students do so at their own pace.

As well as these ways of learning, the curriculum incorporates a number of innovative **ways of thinking**. While much of the content and pedagogy in the curriculum may be familiar, there are four streams that require some explanation.

Design thinking is a powerful methodology for identifying needs and developing solutions, systematised and popularised by innovative design company IDEO and their academic partnership with Stanford University (d.School). The design thinking process involves empathy, ideation, validation and iteration. It provides the framework for courses that involve students producing real-world products in response to authentic needs.

Systems theory is an approach that looks at any situation or object of study as a 'system' - a set of interrelated components. By understanding the nature of different parts that make up a system, and the way parts of the whole relate to one another, systems thinking offers a way of understanding and predicting the behaviour of complex systems. This extremely versatile and powerful framework is used in a range of courses to examine natural and built systems.

Pioneered by researchers such as Daniel Kahneman and Dan Ariely, **behavioural economics** provides a set of tools that many government organisations and businesses are employing to achieve personal and collective change. This is an important skill set that can be woven into projects focusing on engineering individual and social behaviour.

Non-digital games play an important role in the curriculum - not just in terms of play but as subjects of analysis and design. **Game design** is a simple and effective way of encouraging students to explore a topic deeply, and to work collaboratively on expressing key aspects of that topic. This approach to play-based-pedagogy has been explored at the Institute of Play in New York.

Across the curriculum, these ways of learning and thinking are used to endage students with the course materials in a range of diverse and interesting ways. This contributes not only to construction and retention of subject knowledge, but to the development of the eight key skills described earlier.

Calendar and Curriculum

Just as students' time outside of school is increasingly filled up with scheduled activities, so too their school days are filled with various subjects. Within these subjects they must work to defined outcomes, covering specific content. To maximise the potential of students to direct their own study, and to engage deeply with the material, we have taken the approach of minimising the amount of subjects and electives offered.

By limiting the curriculum to these subjects and the associated time, we can make significant scope available for students beyond the mandatory content. This time can be used either to explore the material of most interest to them in more detail, or to study areas of passion outside of the scope of the NSW syllabus.

Based on NSW requirements for the **Record of School Achievement (RoSA)**, students must study the following ten subjects in Years 7 to 10.

- **English** (400 hours)
- **Mathematics** (400 hours)
- **Science** (400 hours)
- **History** (200 hours)
- **Geography** (200 hours)
- **PDHPE** (300 hours)
- **Technology and Applied Studies** (200 hours, in Years 7 and 8)
- **Language** (100 hours, in one year)
- **Visual Arts** (100 hours, in one year)
- **Music** (100 hours, in one year)

TIME	ACTIVITY	DURATION
9:00 am	Block 1	90 mins
10:30 am	Morning Tea	30 mins
11:00 am	Block 2	90 mins
12:30 pm	Lunch	60 mins
1:30 pm	Block 3	90 mins
3:00 pm	Afternoon Tea	30 mins
3:30 pm	Block 4	90 mins
5:00 pm	End of school day	

SCHOOL DAY TIMETABLE

The typical Australian school day is six hours long. This is the case from the day a five-year-old starts Kindergarten to the day they finish Year 12. With students entering Year 7 at an age of eleven or twelve, **we have extended the school day to eight-hour day**, including two hours of breaks. The result is a day that gives students the opportunity to spend longer time frames immersed in different projects. It also offers a finishing time that is more compatible with family lifestyles which increasingly involve two working parents. The additional time also aims to remove the need for work to be done outside of school hours, freeing students to be more engaged in domestic and social activity.

Each school day is broken into **four ninety-minute blocks**. These are naturally separated by half-hour breaks in the morning and afternoon, and a one-hour lunch break in the middle of the day. Consequently, there is no need for bells or artificial transitions between 'periods'. These blocks are organised so that a course runs in the same block each day of the week, for the whole term. Over a typical ten-week term, a course is made up of fifty blocks, so that **each course had a total teaching time of seventy-five hours**. For most of the year, the final block in the day is allocated to the students' Passion Project where they have freedom to define and pursue a project of personal interest.

Assessment and Grading

Each course features **formative assessments** (assessment for learning) and a **summative assessment** (assessment of learning). Summative assessments take different forms depending on the nature of the course, but are generally not an exam or traditional school assignment. Rather, the students are often required to create authentic work - individually or in groups - that has a life outside of the particular course. These works are captured for each student in a **digital portfolio** that students can take with them after graduation, as evidence of their skills and achievements.

In a number of courses, student works are also shared with the school community at the conclusion of the term in the form of a **public exhibition**. This could take the form of a musical concert, an art exhibition, an entrepreneurial 'pitch', an anthology of stories, or a journal of research papers.

Several of the courses involve projects where students create ideas and prototypes for real products, businesses or initiatives. They may decide at the end of term that some of their ideas are good enough to take further. This is encouraged, with teachers and students working to build more evolved prototypes, to find sources of funding and to identify organisations to partner with. A key tool for taking these projects to the next stage will be engaging with **crowd-funding** communities such as Kickstarter and Indiegogo.

While students may be particularly passionate about their innovative ideas and creative works, our curriculum must also incorporate robust mechanisms to ensure that students are learning in accordance with stipulated outcomes. We need to know with confidence that the skills and knowledge being taught are being understood and retained.

In recent years, assessment has become an overly bureaucratic obsession in schools, at times detrimental to the learning it is trying to measure. Consequently, we strive in this curriculum to keep summative assessment for reporting to a reasonable minimum. Based on the NESA model, **our assessment is 'standards based'**, with students being assessed against defined criteria rather than each other. No numerical grades are given for assessments, and no class league tables are produced.

Students become familiar with the syllabus outcomes they are working toward, and the way these will be measured. In the final week of each term, a conference is held between each student and their teacher, reviewing their work that term, with a focus on summartive assessment tasks. This is done on the basis of the digital portfolio that the student has been maintaining. Both student and teacher make determinations of how well the work demonstrates the outcomes identified for the courses being studied. This ranges from an elementary knowledge of a few areas and limited competency (graded as an E) to an extensive knowledge, with the ability to apply this to new situations (graded as an A). Should the student be dissatisfied with their performance on any of the outcomes, they have the opportunity to spend time in the upcoming term producing additional work that specifically addresses this, to improve their grade. If they have demonstrated any of the outcomes more effectively in their work in another course they have completed, they can also present that as evidence for this grading process.

The same collaborative approach, complemented with peer-review from other students, is used to determine **overall grades on each of the eight key skills** at the heart of our model.

Scope and

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Term 1	FOUNDATIONS	KITCHEN	
Term 2	SHAPE DESIGN	LANGUAGE SELECTION	
Term 3	ARTISTS' STUDIO	LANGUAGE LEARNING 1*	PURE MATHS^
Term 4	PRODUCT DESIGN	LANGUAGE LEARNING 2*	SPATIAL GAMING^
		*50 hours	^25 hours

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Term 1	BOOK CLUB	SYSTEMS THINKING
Term 2	WRITERS' STUDIO: STORY	PERSPECTIVES ON WATER
Term 3	PURE MATHS AND SCIENCE	WORLD MODELLING
Term 4	DIGITAL DESIGN	ROBOT COMPETITION

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Term 1	SELF-DISCOVERY	POP CULTURE
Term 2	MUSIC	SYSTEMS IN NATURE
Term 3	MATHS AND MUSIC	WRITERS' STUDIO: CREATIVE NON-FICTION
Term 4	SCIENTIFIC PROGRESS	ECOLOGY MODELLING

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Term 1	BIG AND SMALL SCIENCE	GEOMETRIC EXPRESSION
Term 2	INTERPLANETARY DISAPORA	WRITERS' STUDIO: NOVELLA
Term 3	PURE MATHS	WRITERS' STUDIO: CREATIVE NON-FICTION
Term 4	THESIS	SCHOOL IMPROVEMENT PROJECT

sequence

EARLY AUSTRALIA	GAME ANALYSIS AND DESIGN	EXCURSION
CIVILISATION GAME 1	PASSION PROJECT	EXCURSION
CIVILISATION GAME 2	PASSION PROJECT	EXCURSION
WRITERS' STUDIO: GENRES	PASSION PROJECT	EXCURSION

RUBE GOLDBERG CHALLENGE	PASSION PROJECT	EXCURSION
SCIENCE RESEARCH PROJECT	PASSION PROJECT	EXCURSION
HEALTHY BEHAVIOUR PROJECT	PASSION PROJECT	EXCURSION
WELLBEING PRODUCT	PASSION PROJECT	EXCURSION

MIGRATION AND MOVEMENTS	PASSION PROJECT	EXCURSION
CONTEMPORARY AUSTRALIA	PASSION PROJECT	EXCURSION
FREEDOM GAME	PASSION PROJECT	EXCURSION
PHYSICS RESEARCH PROJECT	PASSION PROJECT	EXCURSION

WELLBEING AND OUR ENVIRONMENT	PASSION PROJECT	EXCURSION
IMPROVING WELLBEING PROJECT	PASSION PROJECT	EXCURSION
SENIOR PROJECT	PASSION PROJECT	EXCURSION
SENIOR PROJECT	PASSION PROJECT	EXCURSION

YEAR 7

Schoolhouse

In their first year at the school, students build the culture necessary for individual and collaborative study. They begin their **Passion Project** (p.26) stream in Term 2 and go on their first four **Excursions** (p.22).

Term 1 begins with **Foundations** (p.18), a course that brings the cohort together as a community and builds the core skills they will need to succeed over the next four years. They spend the term creating and implementing a plan for school meals in **Kitchen** (p.19) and learn the fundamentals of play mechanics in **Game Analysis and Design** (p.21). In **Early Australia** (p.20) they research the history of our region, from ancient times to early colonialism.

In Term 2 students put their knowledge of play to use, designing a game set in Ancient Rome, Egypt or Greece in **Civilisation Game I** (p.28) while exploring the aesthetics of geometric design in **Shape Design** (p.24). The cohort will also collaboratively decide which language they will study for Terms 3 and 4 in **Language Selection** (p.25).

In Term 3 they begin studying their chosen tongue in **Language Learning 1** (p.32). They will engage with **Pure Maths** (p.31) through independent study and work with an artist in **Artists' Studio** (p.30) to create their own work as part of a class exhibition. Continuing the study of historical cultures, **Civilisation Game II** (p.29) challenges students to create a game based on Medieval Europe, India or China.

In the last term, the class will complete language study with **Language Learning 2** (p.33). In **Spatial Gaming** (p.35) students create their own game that employs the mathematics of the Cartesian plane. They will also work through their first design thinking process in **Product Design** (p.34) and explore different types of writing in their first **Writers' Studio** (p.36).

COURSE //

Foundations

Gain personal insight and the core skills for individual and collective success.

The Foundations course provides students an orientation to the school and begins to build the skills and competencies they will need to succeed. Through the course, students gain a greater sense of self- awareness, develop personal study skills and begin working together – both in small groups and as a cohort.

OUTCOMES //

PDHPE	ENG.	OTHER
EN4-9E		A student uses, reflects on and assesses their individual and collaborative skills for learning
PHDPE 4.1		A student describes and analyses the influences on a sense of self
PDHPE 4.2		A student identifies and selects strategies that enhance their ability to cope and feel supported
PDHPE 4.3		A student describes the qualities of positive relationships and strategies to address the abuse of power
PDHPE 4.11		A student selects and uses communication skills and strategies clearly and coherently in a range of new and challenging situations
PDHPE 4.13		A student demonstrates cooperation and support of others in social, recreational and other group contexts

COURSE //

Kitchen

Design, plan and implement a lunch and snack menu for the school.

Food plays an important role in the school, with the communal preparation and consumption of meals (particularly lunch) acting as 'social glue' to bring the cohort together. To establish this role, in the Kitchen course, students work to build the school menu from scratch. They work collectively to research nutrition, production and preparation of food as well as planning the required volumes, costs and logistics to provide the school with a functioning kitchen for the remainder of the year.

OUTCOMES //

	TECHNOLOGY	MATHS	OTHER
MA4-5NA	A student operates with fractions, decimals and percentages		
MA4-6NA	A student solves financial problems involving purchasing goods		
TE4-5AG	A student investigates how food and fibre are produced in managed environments		
TE4-6FO	A student explains how the characteristics and properties of food determine preparation techniques for healthy eating		

YEAR 7 | TERM 1

COURSE //

Early Australia

Create a first person account of the experience of an early Australian.

The Early Australia course explores the early human history of our region. This encompasses pre-colonial Indigenous cultures, the Polynesian expansion, first European contact and the early years of colonisation. The summative assessment will be writing a piece of prose that demonstrated an empathic understanding of the experience of one of these cultural groups.

OUTCOMES //

	HISTORY	ENGLISH	VISUAL ART	SCI.	OTHER
HT4-1	A student describes the nature of history and archaeology and explains their contribution to an understanding of the past				
HT4-2	A student describes major periods of historical time and sequences events, people and societies from the past				
HT4-5	A student identifies the meaning, purpose and context of historical sources				
HT4-9	A student uses a range of historical terms and concepts when communicating an understanding of the past				
HT4-10	A student selects and uses appropriate oral, written, visual and digital forms to communicate about the past				

COURSE //

Game Analysis and Design

Gain an understanding of how games work through playing, critiquing and designing them.

Non-digital games will be a key tool in future courses, for which Game Analysis and Design lays the groundwork. During this course students play a wide variety of board games, card games, dice games, physical games and other non-digital games. The rules and play experience of each are analysed, with students building an understanding of their probabilistic underpinnings as well as developing a language and framework for talking about games. This course also serves to further build a sense of community within the new cohort through shared play.

Toward the end of the course, students begin to build their own simple games, both individually and in small groups.

OUTCOMES //

MATHS	OTHER
MA4-21SP	A student represents probabilities of simple and compound events.

YEAR 7 | TERM 1

COURSE //

Excursions

Challenge, explore and discover yourself and the world around you.

Living in an urban context, it is crucial that the broader natural world plays an important role in the curriculum. Beyond a deeper connection to the natural environment, spending time in natural contexts provides a chance to build a range of physical skills, to study life and earth sciences in context, and to further developing intrapersonal and interpersonal skills.

To do this in an engaging and authentic way, the whole class will go on an three-day excursion to a nearby natural environment towards the end of each term.

Students will stay in tents, manage logistics, and prepare their own food. Each excursion will include a particular physical activity such as hiking, canyoning, cycling, rafting, swimming, or rock climbing.

OUTCOMES //

PDHPE 4.4	A student demonstrates and refines movement skills in a range of contexts and environments
PDHPE 4.5	A student combines the features and elements of movement composition to perform in a range of contexts and environments
PDHPE 4.9	A student describes the benefits of a balanced lifestyle and participation in physical activity
PDHPE 4.10	A student explains how personal strengths and abilities contribute to enjoyable and successful participation in physical activity
PDHPE 4.12	A student assesses risk and social influences and reflects on personal experience to make informed decisions
PDHPE 4.14	A student engages successfully in a wide range of movement situations that displays an understanding of how and why people move
PDHPE 5.4	A student adapts, transfers and improvises movement skills and concepts to improve performance
PDHPE 5.5	A student composes, performs and appraises movement in a variety of challenging contexts
PDHPE 5.9	A student formulates goals and applies strategies to enhance participation in lifelong physical activity
PDHPE 5.10	A student adopts roles to enhance their own and others' enjoyment of physical activity
PDHPE 5.14	A student confidently uses movement to satisfy personal needs and interests
SC4-12ES	A student describes the dynamic nature of models, theories and laws in developing scientific understanding of the Earth and solar system
SC4-14LW	A student relates the structure and function of living things to their classification, survival and reproduction
SC4-15LW	A student explains how new biological evidence changes people's understanding of the world

YEAR 7 | TERM 2

COURSE //

Shape Design

Create a functional or artistic product, inspired by geometry.

This course brings together Mathematics and Visual Arts to explore design using geometric shapes. Students also work with different materials and production processes to create a product based on their design.

OUTCOMES //

	MATHS	VISUAL ARTS	TECHNOLOGY	OTHER
MA4-12MG	A student calculates the perimeters of plane shapes and the circumferences of circles			
MA4-13MG	A student uses formulas to calculate the areas of quadrilaterals and circles, and converts between units of area			
MA4-14MG	A student uses formulas to calculate the volumes of prisms and cylinders, and converts between units of volume			
MA4-16MG	A student applies Pythagoras' theorem to calculate side lengths in right angled triangles, and solves related problems			
MA4-17MG	A student classifies, describes and uses the properties of triangles and quadrilaterals, and determines congruent triangles to find unknown side lengths and angles			
MA4-18MG	A student identifies and uses angle relationships, including those related to transversals on sets of parallel lines			
ART 4.1		A student uses a range of strategies to explore different artmaking conventions and procedures to make artworks		
ART 4.4		A student recognises and uses aspects of the world as a source of ideas, concepts and subject matter in the visual arts		
ART 4.6		A student selects different materials and techniques to make artworks		

COURSE //

Language Selection

As a class, decide which language you will study, and how you will study it.

Before beginning language study in Term 3, the Language Selection course challenges the class as a whole to decide which language they will to study, and how they will to study it. Students conduct research into different languages and reach a consensus on a language through a series of facilitated discussions. During this process they explore the role of language, and gain an appreciation of the various benefits of multilingualism.

Having chosen a language, the group then collectively work to decide on the most effective way of learning it, within the constraints of the upcoming Language Learning courses. This may involve identifying online courses or resources, connecting with schools whose students speak the desired language, or recruiting a suitably qualified tutor.

YEAR 7 | TERM 2

COURSE //

Passion Project

Follow your passion; deepen your understanding, develop your skills or create something new.

From the second term of Year 7 onwards, one of the four blocks each day is allocated to a Passion Project course. This is a free elective in which students can explore any topic they are passionate about. In the first week of the course students particulate in group discussions about what they will pursue this term, and develop a ten-week plan for their activity. By the end of the week students and teachers need to have agreed on a project for each student - this may be a completely new project, or may build on what they have already been working on. Students may also work individually or in groups.

OUTCOMES //

PDHPE 4.15	A student devises, applies and monitors plans to achieve short-term and long-term goals
PDHPE 4.16	A student clarifies the source and nature of problems and draws on personal skills and support networks to resolve them
PDHPE 5.15	A student devises, justifies and implements plans that reflect a capacity to prioritise, think creatively and use resources effectively
PDHPE 5.16	A student predicts potential problems and develops, justifies and evaluates solutions

Schoolhouse

Each week students have a one-on-one meeting with their teacher, though they may also seek additional support - from their teacher, or elsewhere as required. The whole class also has a weekly discussion where students share observations and challenges. Students keep some form of journal, and in the final weeks write a self-reflective report on their project for the term. In the final week, each student presents back to the class on their project - this may be a chronicle of their activity or a demonstration of the result.

The scope for projects in limited only by the imagination;

- Learning an instrument
- Researching a specific topic
- Developing skill in a particular sport or activity
- Participating in a social movement
- Experimenting with a particular artistic medium or style
- Language learning
- Journalistic or fiction writing
- Volunteering or an internship

COURSE //

Civilisation Game 1

Design a board game that brings to life a key aspect of an ancient civilisation.

In the first of two connected courses, students explore an ancient civilisation of their choice (Egypt, Rome or Greece) through independent study. In addition to the human context, they research the landforms of the area at that time. Through this process they identify key aspects of interest about their civilisation of choice. The culmination of the course is building these aspects into a board game - either working individually or in a small group.

OUTCOMES //

HISTORY	GEOGRAPHY	MATH	ENG.	OTHER
HT4-6	A student uses evidence from sources to support historical narratives and explanations			
HT4-8	A student locates, selects and organises information from sources to develop an historical inquiry			
GE4-1	A student locates and describes the diverse features and characteristics of a range of places and environments			
GE4-2	A student describes processes and influences that form and transform places and environments			
GE4-7	A student acquires and processes geographical information by selecting and using geographical tools for inquiry			

COURSE //

Civilisation Game 2

Design a board game that brings to life a key aspect of an ancient civilisation and its relationship with its environment.

In the second of two connected courses, students explore Medieval Europe and an ancient Asian civilisation (either India or China). In addition to the human context they research the landforms of the area at that time, and examine the relationship between people and their geographical context. Through this process they identify key aspects of interest about their civilisation of choice. They then create a game that demonstrates the interconnectedness of their chosen culture and its environment.

OUTCOMES //

HISTORY	GEOGRAPHY	MATH	ENG.	OTHER

HT4-3	A student describes and assesses the motives and actions of past individuals and groups in the context of past societies
HT4-4	A student describes and explains the causes and effects of events and developments of past societies over time
HT4-7	A student identifies and describes different contexts, perspectives and interpretations of the past
GE4-3	A student explains how interactions and connections between people, places and environments result in change
GE4-4	A student examines perspectives of people and organisations on a range of geographical issues

COURSE //

Artists' Studio

Make art.

Students spend ten weeks working with a professional artist, exploring different media; investigating and critiquing different styles of art; and creating their own original work.

These works are then displayed in an end-of-term exhibition at a local gallery.

OUTCOMES //

	VISUAL ARTS	ENGLISH
ART 4.2	A student explores the function of and relationships between artist – artwork – world – audience	
ART 4.3	A student makes artworks that involve some understanding of the frames	
ART 4.5	A student investigates ways to develop meaning in their artworks	
ART 4.7	A student explores aspects of practice in critical and historical interpretations of art	
ART 4.8	A student explores the function of and relationships between the artist – artwork – world – audience	
ART 4.9	A student begins to acknowledge that art can be interpreted from different points of view	
ART 4.10	A student recognises that art criticism and art history construct meanings	

COURSE //

Pure Maths

Build skills in algebra, bases, equations and time zones.

In this course, students build competencies in areas of Mathematics that cannot easily be authentically incorporated into larger projects. These include algebra, bases, linear equations, quadratic equations, and time zones.

The course involves self-study of relevant online resources, small group discussion, and individual support. As a final product, each student produces a paper of their own devising demonstrating their mastery of the content.

OUTCOMES //

MATHS (THIS COURSE IS ONLY 25 HOURS)

MA4-1WM	A student communicates and connects mathematical ideas using appropriate terminology, diagrams and symbols
MA4-8NA	A student generalises number properties to operate with algebraic expressions
MA4-9NA	A student operates with positive-integer and zero indices of numerical bases
MA4-10NA	A student uses algebraic techniques to solve simple linear and quadratic equations
MA4-15MG	A student performs calculations of time that involve mixed units, and interprets time zones

COURSE //

Language Learning 1

Build basic language skills, with a focus on oral communication.

Based on their selection in the previous term, the class begins studying their language of choice. For this term, the focus in on spoken language - depending on the approach students have identified this will likely include immersive environments where they develop basic vocabulary and rudimentary conversational skills.

OUTCOMES //

LANGUAGE	(THIS COURSE IS ONLY 50 HOURS)
LXX4-1C	A student uses [Language] to interact with others to exchange information, ideas and opinions, and make plans
LXX4-5U	A student applies [Language] pronunciation and intonation patterns
LX4-7U	A student applies features of [Language] grammatical structures and sentence patterns to convey information and ideas
LX4-9U	A student identifies that language use reflects cultural ideas, values and beliefs

COURSE //

Language Learning 2

Extending basic language skills, with a focus on written communication.

Building on the previous term, the class continues studying their language of choice. In this term, they continue to work on spoken language, but also on reading and written expression.

OUTCOMES //

LANGUAGE	(THIS COURSE IS ONLY 50 HOURS)
LXX4-2C	A student identifies main ideas in, and obtains information from texts
LXX4-3C	A student organises and responds to information and ideas in texts for different audiences
LX4-4C	A student applies a range of linguistic structures to compose texts in [Language], using a range of formats for different audiences
LX4-6C	A student demonstrates understanding of key aspects of [Language] writing conventions
LX4-8U	A student identifies variations in linguistic and structural features of texts

COURSE //

Product Design

Design and produce a product, in response to an identified human need.

The 'design thinking' process championed by IDEO forms the backbone of this course, in which students become authentic product designers. They spend time researching existing products, and identifying potential problems and needs.

They then work through an ideation, prototyping, validation and refinement process - exploring a range of materials and production processes. In the final week, products are exhibited and pitched in a public forum.

OUTCOMES //

	TECHNOLOGY	SCIENCE	MATHS	ENG.	OTH.
TE4-1DP	A student designs, communicates and evaluates innovative ideas and creative solutions to authentic problems or opportunities				
TE4-2DP	A student plans and manages the production of designed solutions				
TE4-3DP	A student selects and safely applies a broad range of tools, materials and processes in the production of quality projects				
TE4-9MA	A student investigates how the characteristics and properties of tools, materials and processes affect their use in designed solutions				
SC4-5WS	A student produces a plan to investigate identified questions, hypotheses or problems, individually and collaboratively				
MA4-2WM	A student applies appropriate mathematical techniques to solve problems				

COURSE //

Spatial Gaming

Create games that involve movement in two-dimensional planes.

Students explore the mathematics of spatial calculation in this course (linear relationships, Cartesian transformations and so on). As a consequence, they develop a simple digital or non-digital game that uses two-dimensional spatial relationships as part of its play mechanics.

OUTCOMES //

MATHS **OTHER** (THIS COURSE IS ONLY 25 HOURS)

MA4-4NA	A student compares, orders and calculates with integers, applying a range of strategies to aid computation
MA4-11NA	A student creates and displays number patterns; graphs and analyses linear relationships; and performs transformations on the Cartesian plane

COURSE //

Writers' Studio: Genres

Explore a wide range of genres - as a reader and as a writer.

This is the first course to use the 'Writer's Studio' model, where the class is broken down into smalls workshop groups. Each week, students are given reading material from a particular genre, and a writing task related to that genre. The following week they spend one of their lessons with their workshop group, discussing the readings, sharing their writing work, and providing critical feedback to their peers.

OUTCOMES //

	ENGLISH	OTHER
EN4-1A	A student responds to and composes texts for understanding, interpretation, critical analysis, imaginative expression and pleasure	
EN4-3B	A student uses and describes language forms, features and structures of texts appropriate to a range of purposes, audiences and contexts	
EN4-6C	A student identifies and explains connections between and among texts	


IMPERIAL 200

YEAR 8

Schoolhouse

Having laid the framework for a vibrant, challenging approach in the first year of the curriculum, Year 8 provides a wealth of rich experiences and engaging projects. Each terms sees students continuing to develop and follow their interests with their own **Passion Projects** (p.26) as well as regular **Excursions** (p.22) to connect with the natural world, themselves, and each other.

Beginning the year with a focus on literacy, **Book Club** (p.40) is an opportunity for students to extend their reading into new genres. Term 1 also provides a chance for teams of students to invent imaginatively bizarre contraptions in the **Rube Goldberg Challenge** (p.42), and gives them a foundation of skills for mathematical model building in **Systems Thinking** (p.41).

Term 2 is home to the Year 8 **Writers' Studio** (p.43), where students study and write short stories. They also examine one of the planet's most critical resources in **Perspectives on Water** (p.45), and conduct an original scientific experiment in their **Science Research Project** (p.44).

In Term 3, students put their systems thinking skills to use in the ambitious **World Modelling** (p.47) course, while using science to change people's behaviour for the better in the **Healthy Behaviour Project** (p.48). The **Pure Maths and Science** (p.46) course uses independent study and discussions to give students a chance to grapple with topics in algebra and chemistry.

The year ends with the Term 4 **Robot Competition** (p.51), in which groups of students build robots to meet an exacting challenge. This term they also extend the work of their Health Behaviour Project to develop a **Wellbeing Product** (p.49), using a design thinking process to produce a solution that can improve lives. Finally, in **Digital Design** (p.50), students develop a digital application or product in an area of interest.

YEAR 8 | TERM 1

COURSE //

Book Club

Challenge yourself to go outside of your comfort zone and read some new and interesting things.

Students are provided opportunity and encouragement to try reading a wider range of material - from biographies to poetry, from romance to science fiction. Each week the class discusses what they have been reading, with students unpacking literary technique and developing their own personal taste.

ENGLISH	OTHER

Schoolhouse

COURSE //

Systems Thinking

Develop your own mathematical model for a system in the real world.

In this course, students are introduced to the key ideas and tools of systems theory. By considering different natural environments and phenomena as 'systems' they come to a deeper understanding of the relationships between component parts and the overall behaviour of the systems. As a result, students develop an original model of a system they observe in the real world.

OUTCOMES //

SCIENCE	MATHS.	OTHER
MA4-19NA	A student collects, represents and interprets single sets of data, using appropriate statistical displays	
MA4-20SP	A student analyses single sets of data using measures of location, and range	
SC4-11PW	A student discusses how scientific understanding and technological developments have contributed to finding solutions to problems involving energy transfers and transformations	

YEAR 8 | TERM 1

COURSE //

Rube Goldberg Challenge

Create a wondrous contraption.

Working in groups, this course challenges students to explore physical machines and the accompanying scientific concepts (force, energy, movement, and so on). Their task is to develop a 'Rube Goldberg' machine, a contraption that achieves a simple task through ludicrously complicated mechanical means. The completed machines are displayed in an end-of-term exhibition.

OUTCOMES //

	TECHNOLOGY	SCIENCE	OTHER
TE4-8EN	A student explains how force, motion and energy are used in engineered systems		
SC4-10PW	A student describes the action of unbalanced forces in everyday situations		

Schoolhouse

COURSE //

Writers' Studio: Stories

Contribute to a collection of original short stories.

Over the ten weeks of this course, students read a wide range of short stories, write their own, and critique each other's work. The resulting stories are published in an anthology.

OUTCOMES //

	ENGLISH	OTHER
EN4-4B	A student makes effective language choices to creatively shape meaning with accuracy	
EN4-5C	A student thinks imaginatively, creatively, interpretively and critically about information, ideas and arguments to respond to and compose texts	
EN4-7D	A student demonstrates understanding of how texts can express aspects of their broadening world and their relationships within it	
EN4-8D	A student identifies, considers and appreciates cultural expression in texts	

YEAR 8 | TERM 2

COURSE //

Science Research Project

Devise, conduct and report on a scientific experiment.

Students begin this course by working through a number of scientific experiments involving energy, force, substances and reactions. As a consequence they each develop their own experiment, which they conduct and write up in a scientific report.

OUTCOMES //

SCIENCE	OTHER
SC4-1VA	A student appreciates the importance of science in their lives and the role of scientific inquiry in increasing understanding of the world around them
SC4-4WS	A student identifies questions and problems that can be tested or researched and makes predictions based on scientific knowledge
SC4-6WS	A student follows a sequence of instructions to safely undertake a range of investigation types, collaboratively and individually
SC4-7WS	A student processes and analyses data from a first-hand investigation and secondary sources to identify trends, patterns and relationships, and draw conclusions
SC4-9WS	A student presents science ideas, findings and information to a given audience using appropriate scientific language, text types and representations

COURSE //

Perspectives on Water

Tell the story of the future of water - utopia or dystopia?

We are increasingly aware of water's critical importance to our future, as a society and as a species. This course examines the science of water as part of our ecosystem, as well as the way water is used, managed and mismanaged in various human contexts. Students are invited to articulate what they believe is the most likely future of water on the planet and within society - and what factors will influence this future becoming a reality.

OUTCOMES //

SCIENCE	GEOGRAPHY.	OTHER
SC4-3VA	A student demonstrates confidence in making reasoned, evidence-based decisions about the current and future use and influence of science and technology, including ethical considerations	
SC4-13ES	A student explains how advances in scientific understanding of processes that occur within and on the Earth, influence the choices people make about resource use and management	
GE4-5	A student discusses management of places and environments for their sustainability	

YEAR 8 | TERM 3

COURSE //

Pure Maths and Science

Discover the secrets of Mathematics and Chemistry.

In this course, students build competencies in areas of Mathematics and Chemistry that cannot easily be authentically incorporated into larger projects. These include algebra, geometry, properties of matter, and the elements. The course involves self-study of relevant online resources and small group discussion and tutoring. As a final product, each student produces a paper of their own devising demonstrating their mastery of the content.

OUTCOMES //

	MATHS	SCIENCE	OTHER
SC4-16CW	A student describes the observed properties and behaviour of matter, using scientific models and theories about the motion and arrangement of particles		
SC4-17CW	A student explains how scientific understanding of, and discoveries about the properties of elements, compounds and mixtures relate to their uses in everyday life		

Schoolhouse

COURSE //

World Modelling

Build your own world in ten weeks.

Having studied the basics of systems theory earlier in the year, students apply this to large-scale natural phenomenon. Critically, they look at the 'interconnectedness' of different aspects of the world and its inhabitants. These observations then form the basis for simple ecosystem models.

OUTCOMES //

	MATHS	GEOGRAPHY.	OTHER
MA4-3WM	A student recognises and explains mathematical relationships using reasoning		
MA4-7NA	A student operates with ratios and rates, and explores their graphical representation		
GE4-8	A student communicates geographical information using a variety of strategies		

YEAR 8 | TERM 3

COURSE //

Healthy Behaviour Project

Use behavioural change tools to encourage healthier lifestyles.

Over the past several decades, we have gained significant insight into how people make decisions, through behavioural economics, cognitive science and other disciplines. In this course, students explore different aspects of healthy living, and the poor decisions people make. As a consequence they develop a means of improving healthy behaviour - through changing processes or communication.

OUTCOMES //

PDHPE		ENG.	MATH	GEO.	OTHER
PDHPE 4.6	A student describes the nature of health and analyses how health issues may impact on young people				
PDHPE 4.7	A student identifies the consequences of risk behaviours and describes strategies to minimise harm				
PDHPE 4.8	A student describes how to access and assess health information, products and services				
GE4-6	A student explains differences in human wellbeing				
TE4-10TS	A student explains how people in technology related professions contribute to society now and into the future				

Schoolhouse

COURSE //

Wellbeing Product

Design and produce a product to make people healthier.

Building on their experience with the 'design thinking' process, students again become authentic product designers. This time they expand on last term's study of healthy behaviour and spend time researching existing products that seek to encourage healthy lifestyles. They create their own product, working through ideation, prototyping, validation and refinement. In the final week, prototypes are exhibited and pitched in a public forum.

OUTCOMES //

PDHPE		MATHS.	OTHER
SC4-2VA	A student shows a willingness to engage in finding solutions to science-related personal, social and global issues, including shaping sustainable futures		
SC4-8WS	A student applies scientific understanding and critical thinking skills to suggest possible solutions to identified problems		

YEAR 8 | TERM 4

COURSE //

Digital Design

Design and develop your own application, system, or digital product.

There are any number of different types of digital systems or products students may choose to create as part of this course. Early in the term they spend time exploring a range of different platforms, technologies and tools - as well as using a design thinking process to identify possible areas of interest. During the second half of the term they work to design and build a functioning prototype of a digital product.

OUTCOMES //

TECHNOLOGY		ENGLISH	OTHER
TE4-4DP	A student designs algorithms for digital solutions and implements them in a general-purpose programming language		
TE4-7DI	A student explains how data is represented in digital systems and transmitted in networks		
EN4-2A	A student effectively uses a widening range of processes, skills, strategies and knowledge for responding to and composing texts in different media and technologies		

Schoolhouse

COURSE //

Robot Competition

Build a robot to meet the this year's competition challenge.

Each year this course presents a new real-world challenge for students to meet - from completing an obstacle course to taking an object from one location to another.

Working in groups, students explore different materials and engineering solutions to build robots that solve the problem in the most effective (or creative) way.

TECHNOLOGY	MATHS.	SCIENCE	OTHER

Schoolhouse

YEAR 9

Having completed the first half of the curriculum, students move into Year 9, where courses challenge them to explore topics more deeply, and create more significant and original works.

In a similar fashion to the Foundations course in Year 7, the year begins with **Self Discovery** (p.54), an opportunity for students to take stock, and to gain a greater understanding of themselves, and their ambitions for the future. Also in Term 1, the class studies **Migration and Movements** (p.56) of people from ancient to modern times. Finally, **Pop Culture** (p.55) uses the tools and techniques of cultural studies to empower students to critique and understand the cultural forces and objects around them.

In Term 2, **Contemporary Australia** (p.57) picks up from the historical perspective of Early Australia to look at more recent periods and events. Students deepen their understanding of systems thinking in **Systems in Nature** (p.58) and work with a professional musician on reading and performing a range of musical pieces in **Music** (p.59).

Maths and Music (p.60) continues the musical theme into Term 3, where students explore digital production of music, composing their own work. In **Freedom Game** (p.61), the class examines the nature of rights and freedoms, and find ways to bring these themes to life through play. They also develop their journalistic writing skills in this year's **Writers' Studio** (p.62).

Term 4 finishes the year with a range of perspectives on science. In **Physics Research Project** (p.64), students again develop, conduct and report on their own piece of original scientific research. In **Scientific Progress** (p.65), the class takes a sociological perspective, exploring the ways science has evolved over time, while **Ecology Modelling** (p.63) extends on Systems in Nature to provide students an opportunity to model natural ecologies.

YEAR 9 | TERM 1

COURSE //

Self Discovery

Gain and express a deeper understanding of yourself and your ambitions.

Having reached the halfway point in the curriculum, students pause to take stock of themselves - building on their understanding of their own aptitudes, behaviours and challenges. As the culmination of a wide range of experiences focused on self discovery and collaboration, each student writes a piece that expresses their plans and desires for the next two years - personally, academically and socially.

OUTCOMES //

ENGLISH	OTHER
PDHPE 5.1	A student analyses how they can support their own and others' sense of self
PDHPE 5.2	A student evaluates their capacity to reflect on and respond positively to challenges
PDHPE 5.3	A student analyses factors that contribute to positive, inclusive and satisfying relationships
PDHPE 5.11	A student adapts and evaluates communication skills and strategies to justify opinions, ideas and feelings in increasingly complex situations
PDHPE 5.12	A student adapts and applies decision making processes and justifies their choices in increasingly demanding contexts
PDHPE 5.13	A student adopts roles and responsibilities that enhance group cohesion and the achievement of personal and group objectives
EN5-9E	A student purposefully reflects on, assesses and adapts their individual and collaborative skills with increasing independence and effectiveness

COURSE //

Pop Culture

Tell the story of a pop culture icon.

This course introduces students to key concepts and methods of cultural studies. They explore a number of different subcultures and cultural artefacts, before choosing their own site of investigation and conducting a detailed examination of a particular topic of cultural interest.

ENGLISH	HISTORY	OTHER

YEAR 9 | TERM 1

COURSE //

Migration and Movement

Build a game that explores the movement of peoples.

The movement of people (voluntary and involuntary) has been a critical part of the human story since ancient times. In this course, students examine recent and ancient diasporas, migrations and journeys. In developing empathy with the peoples and their travels, they create games that capture key themes of these experiences.

OUTCOMES //

	HISTORY	ENGLISH	GEOGRAPHY	OTHER
HT5-3	A student explains and analyses the motives and actions of past individuals and groups in the historical contexts that shaped the modern world and Australia			
HT5-4	A student explains and analyses the causes and effects of events and developments in the modern world and Australia			
HT5-6	A student uses relevant evidence from sources to support historical narratives, explanations and analyses of the modern world and Australia			
HT5-7	A student explains different contexts, perspectives and interpretations of the modern world and Australia			
HT5-10	A student selects and uses appropriate oral, written, visual and digital forms to communicate effectively about the past for different audiences			

COURSE //

Contemorary Australia

Narrate your family history against the backdrop of the last century of Australian history.

This course covers key moments in recent Australian history, including the country's participation in conflicts and global movements.

As they chart this history, students explore their own family's connection to these events, producing a personal narrative.

OUTCOMES //

	HISTORY	ENGLISH	GEOGRAPHY	MUSIC	OTHER
HT5-1	A student explains and assesses the historical forces and factors that shaped the modern world and Australia				
HT5-2	A student sequences and explains the significant patterns of continuity and change in the development of the modern world and Australia				
HT5-5	A student identifies and evaluates the usefulness of sources in the historical inquiry process				
HT5-8	A student selects and analyses a range of historical sources to locate information relevant to an historical inquiry				
HT5-9	A student applies a range of relevant historical terms and concepts when communicating an understanding of the past				

YEAR 9 | TERM 2

COURSE //

Systems in Nature

Predict the future using your mathematical model of a natural system.

Students examine a range of different natural systems (from the meteorological to the biological) through the lens of systems theory. As a result of their growing understanding of these systems they develop their own model of a particular natural system and use it to make predictions.

OUTCOMES //

MATHS	SCIENCE	OTHER
MA5.2-1WM	A student selects appropriate notations and conventions to communicate mathematical ideas and solutions	
MA5.2-2WM	A student interprets mathematical or real-life situations, systematically applying appropriate strategies to solve problems	
SC5-14LW	A student analyses interactions between components and processes within biological systems	

Schoolhouse

COURSE //

Music

Build skills in reading and playing music.

Working with a professional musician, the class builds their awareness of musical fundamentals as well as reading and playing pieces using various instruments. The ten weeks of the course culminates in a class performance.

OUTCOMES //

	MUSIC	OTHER
MUSIC 4.1	A student performs in a range of musical styles demonstrating an understanding of musical concepts	
MUSIC 4.3	A student performs music demonstrating solo and/or ensemble awareness	
MUSIC 4.4	A student demonstrates an understanding of musical concepts through exploring, experimenting, improvising, organising, arranging and composing	
MUSIC 4.5	A student notates compositions using traditional and/or non-traditional notation	
MUSIC 4.7	A student demonstrates an understanding of musical concepts through listening, observing, responding, discriminating, analysing, discussing and recording musical ideas	
MUSIC 4.8	A student demonstrates an understanding of musical concepts through aural identification and discussion of the features of a range of repertoire	
MUSIC 4.9	A student demonstrates musical literacy through the use of notation, terminology, and the reading and interpreting of scores used in the music selected for study	
MUSIC 4.11	A student demonstrates an appreciation, tolerance and respect for the aesthetic value of music as an artform	
MUSIC 4.12	A student demonstrates a developing confidence and willingness to engage in performing, composing and listening experiences	

YEAR 9 | TERM 3

COURSE //

Mathematics and Music

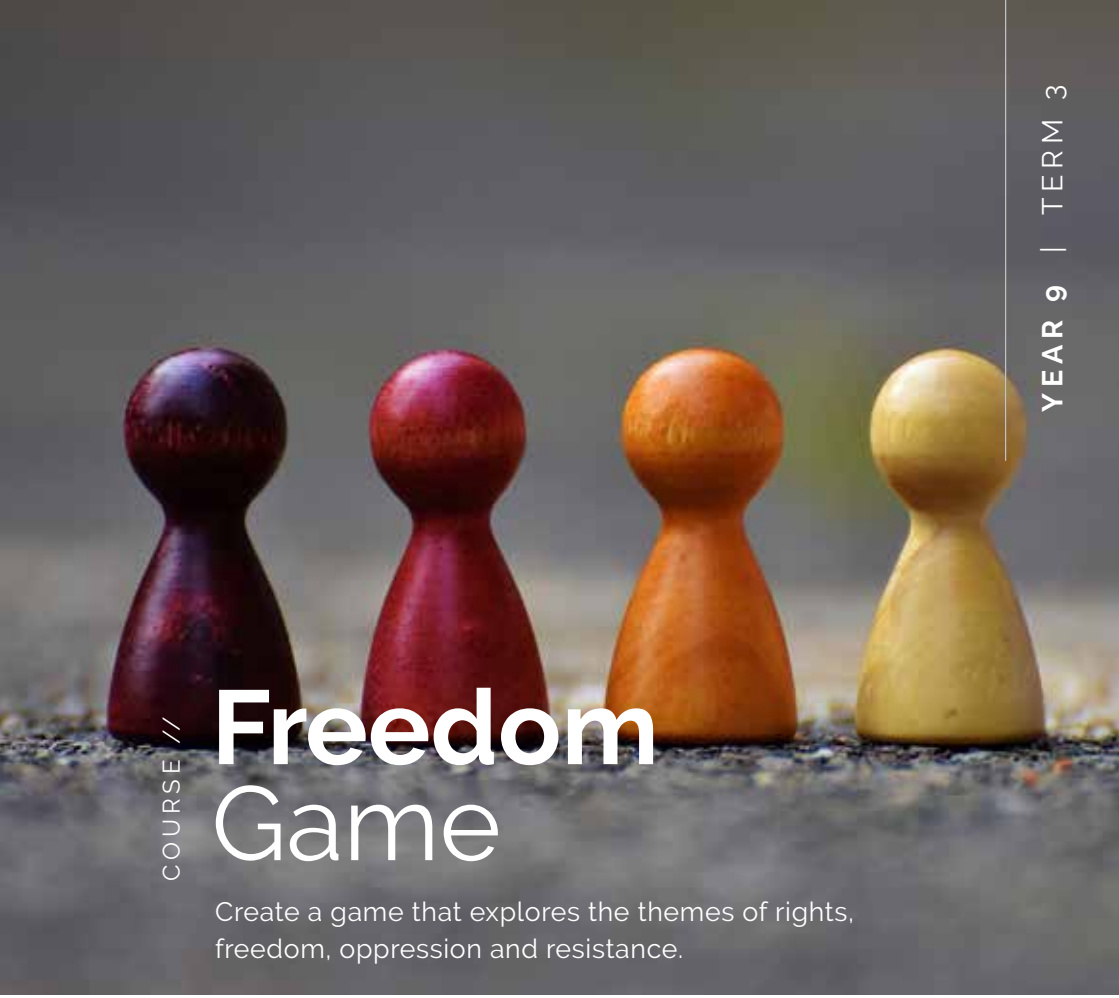
Compose an original piece of music using digital technology.

In this course, students explore the relationship between mathematics and music. Concepts including geometric patters, linear relationships and probability are examined, as well as their expression through music. Graphical representations are examined, and used to represent aspects of musical works. Students use digital technologies to compose their own musical piece, inspired by these mathematical constructs.

OUTCOMES //

MUSIC		MATHS	OTHER
MUSIC 4.2	A student performs music using different forms of notation and different types of technology across a broad range of musical styles		
MUSIC 4.6	A student experiments with different forms of technology in the composition process		
MUSIC 4.10	A student identifies the use of technology in the music selected for study, appropriate to the musical context		

Schoolhouse



COURSE //

Freedom Game

Create a game that explores the themes of rights, freedom, oppression and resistance.

Rights and freedoms are a critical part of society, and have evolved over time in response to social forces. Over ten weeks, students explore how these factors have been shaped, in particular looking at the role of social action. The dynamics of social rights and freedoms are then captured in a playable game developed by each student.

OUTCOMES //

HISTORY	MATHS	OTHER
MA5.1-13SP	A student calculates relative frequencies to estimate probabilities of simple and compound events	
MA5.2-17SP	A student describes and calculates probabilities in multi-step chance experiments	

YEAR 9 | TERM 3

COURSE //

Writer's Studio: Creative Non-fiction

Write a piece of journalism to submit for publication.

Creative non-fiction, also known as fictocritical writing or 'the new journalism' (a term coined by Tom Wolfe) tells true stories through creative writing. In this course students will develop their skills as researchers and journalists, as well as storytellers.

Over the ten weeks they will read and write a range of pieces on different topics. The culmination will be a short non-fiction piece on a topic of interest to the student, intended for online or offline publication.

OUTCOMES //

	ENGLISH	OTHER
EN5-1A	A student responds to and composes increasingly sophisticated and sustained texts for understanding, interpretation, critical analysis, imaginative expression and pleasure	
EN5-2A	A student effectively uses and critically assesses a wide range of processes, skills, strategies and knowledge for responding to and composing a wide range of texts in different media and technologies	
EN5-3B	A student selects and uses language forms, features and structures of texts appropriate to a range of purposes, audiences and contexts, describing and explaining their effects	
EN5-7D	A student understands and evaluates the diverse ways texts can represent personal and public worlds	
EN5-8D	A student questions, challenges and evaluates cultural assumptions in texts and their effects on meaning	

COURSE //

Ecology Modelling

Create a mathematical model of a real or fictional ecological system.

In this course, students explore the nature of ecology from scientific and geographic perspectives. Using a systems theory approach they analyse different ecosystems, and build a model of their own to explain ecological processes and relationships.

OUTCOMES //

	GEOGRAPHY	MATHS	SCIENCE	OTHER
GE5-1	A student explains the diverse features and characteristics of a range of places and environments			
GE5-2	A student explains processes and influences that form and transform places and environments			
GE5-3	A student analyses the effect of interactions and connections between people, places and environments			
GE5-8	A student communicates geographical information to a range of audiences using a variety of strategies			
MA5.1-6NA		A student determines the midpoint, gradient and length of an interval, and graphs linear relationships		
MA5.1-7NA		A student graphs simple non-linear relationships		
MA5.2-8NA		A student solves linear and simple quadratic equations, linear inequalities and linear simultaneous equations, using analytical and graphical techniques		
MA5.2-9NA		A student uses the gradient-intercept form to interpret and graph linear relationships		
MA5.2-10NA		A student connects algebraic and graphical representations of simple non-linear relationships		
MA5.2-16SP		A student investigates relationships between two statistical variables, including their relationship over time		

YEAR 9 | TERM 4

COURSE //

Physics Research Project

Conduct scientific research and write a paper to submit to an academic journal.

Students begin this course working through a number of scientific experiments involving energy, force and motion. As a consequence they each develop their own experiment, which they conduct and write up. These may be submitted to existing academic journals, or may be published as a collection.

OUTCOMES //

	SCIENCE	ENG.	OTHER
SC5-4WS	A student develops questions or hypotheses to be investigated scientifically		
SC5-5WS	A student produces a plan to investigate identified questions, hypotheses or problems, individually and collaboratively		
SC5-6WS	A student undertakes first-hand investigations to collect valid and reliable data and information, individually and collaboratively		
SC5-7WS	A student processes, analyses and evaluates data from first-hand investigations and secondary sources to develop evidence-based arguments and conclusions		
SC5-9WS	A student presents science ideas and evidence for a particular purpose and to a specific audience, using appropriate scientific language, conventions and representations		
SC5-10PW	A student applies models, theories and laws to explain situations involving energy, force and motion		
SC5-11PW	A student explains how scientific understanding about energy conservation, transfers and transformations is applied in systems		
MA5.2-3WM	A student constructs arguments to prove and justify results		
MA5.2-5NA	A student recognises direct and indirect proportion, and solves problems involving direct proportion		

COURSE //

Scientific Progress

Create an expression of the nature of scientific knowledge and discovery.

Over ten weeks, students journey through the ongoing story of scientific discovery. They map the evolution of ideas in geology and cosmology; in chemistry and biology. As a result, they gain an appreciation of the complex nature of 'scientific progress', as theorised by writers such as Karl Popper. They then express this understanding through the creative means of their own choosing - in a piece of creative writing, an artwork, a piece of music, or even a game.

OUTCOMES //

	SCIENCE	OTHER
SC5-1VA	A student appreciates the importance of science in their lives and the role of scientific inquiry in increasing understanding of the world around them	
SC5-12ES	A student describes changing ideas about the structure of the Earth and the universe to illustrate how models, theories and laws are refined over time by the scientific	
SC5-13ES	A student explains how scientific knowledge about global patterns of geological activity and interactions involving global systems can be used to inform decisions	
SC5-15LW	A student explains how biological understanding has advanced through scientific discoveries, technological development, and the needs of society	
SC5-16CW	A student explains how models, theories and laws about matter have been refined as new scientific evidence becomes available	
SC5-17CW	A student discusses the importance of chemical reactions in the production of a range of substances, and the influence of society on the development of new materials	

Schoolhouse

YEAR 10

This constitutes the final year of the curriculum. As such, it acts as a capstone, drawing together some of the threads that have been developed in previous years. Students have considerable freedom to explore the areas of most interest to them, and are encouraged to do so in increasing depth and complexity. In many instances, they will be working at a level that allows them to engage with professionals in their fields of interest.

In Term 1, **Wellbeing and our Environment** (p.70) is an opportunity to study human wellbeing, and its reciprocal relationship with the places and spaces in which humans exist. Students explore the beauty of mathematics in **Geometric Expression** (p.69), and gain a perspective for the profound scale of the universe and our place in it, with **Big and Small Science** (p.68).

The Year 10 **Writer's Studio** (p.72) comes in Term 2, where students are challenged to write the draft of an entire novella. They also predict the future of humanity as they study possible scenarios of **Interplanetary Diaspora** (p.73). Finally, they again use design thinking to make the world a little better with the **Improving Wellbeing Project** (71).

Term 3 marks the beginning of the **Senior Class Project** (p.76), which will run for remainder of the year - giving the whole class the opportunity to create a project that seeks to make a real difference. Students also study a range of mathematics topics in **Pure Maths** (p.75) and develop an idea for a new business in **Start-Up Crash Course** (p.74).

In their final term, students turn their well-developed skills for design toward their own school in the **School Improvement Project** (p.76), as well as looking deeply into a topic of interest to produce a significant written **Thesis** (p.79). During this term, students wishing to progress to advanced mathematics in future years can opt to cover the required content in **Mathematics Extension** (p.78) during their final Passon Project block.

YEAR 10 | TERM 1

COURSE //

Big and Small Science

Gain a cosmological perspective, and illustrate the most important aspect of the universe.

In this course, students discover the fascinating worlds of the very small and the very large. From the structure of the atom to the structure of the universe, they explore the different models that explain how things are structured, as well as the process of discovery that have led to these models. As a final assessment, students choose a model and express it as an annotated diagram.

OUTCOMES //

SCIENCE		OTHER
MA5.1-9MG	A student interprets very small and very large units of measurement, uses scientific notation, and rounds to significant figures	

Schoolhouse

COURSE //

Geometric Expression

Create beauty from the underlying patterns and shapes of mathematics.

Students study complex geometric forms and relationships, before looking at how these mathematical ideas can be expressed - through art, music, or other means of expression. As inspiration, the class explores other works of beauty that have been inspired by mathematics.

OUTCOMES //

	MATHS	OTHER
MA5.1-8MG	A student calculates the areas of composite shapes, and the surface areas of rectangular and triangular prisms	
MA5.1-11MG	A student describes and applies the properties of similar figures and scale drawings	
MA5.2-11MG	A student calculates the surface areas of right prisms, cylinders and related composite solids	
MA5.2-12MG	A student applies formulas to calculate the volumes of composite solids composed of right prisms and cylinders	
MA5.2-13MG	A student applies trigonometry to solve problems, including problems involving bearings	
MA5.2-14MG	A student calculates the angle sum of any polygon and uses minimum conditions to prove triangles are congruent or similar	

YEAR 10 | TERM 1

COURSE //

Wellbeing and our Environment

Gain and express a deeper understanding of the how our environment effects us.

How is our wellbeing connected to our environment? What effect do we have on it and what effect does it have on us? Exploring these connections by analysing human and geographical aspects of different contexts, students gain a deeper appreciation for how things are connected.

OUTCOMES //

	GEOGRAPHY	PDHPE	MATHS	OTHER
GE5-4	A student accounts for perspectives of people and organisations on a range of geographical issues			
GE5-5	A student assesses management strategies for places and environments for their sustainability			
GE5-6	A student analyses differences in human wellbeing and ways to improve human wellbeing			
GE5-7	A student acquires and processes geographical information by selecting and using appropriate and relevant geographical tools for inquiry			
PDHPE 5.6		A student analyses attitudes, behaviours and consequences related to health issues affecting young people		
PDHPE 5.7		A student analyses influences on health decision making and develops strategies to promote health and safe behaviours		
PDHPE 5.8		A student critically analyses health information, products and services to promote health		
MA5.1-12SP			A student uses statistical displays to compare sets of data, and evaluates statistical claims made in the media	
MA5.2-15SP			A student uses quartiles and box plots to compare sets of data, and evaluates sources of data	

COURSE //

Improving Wellbeing Project

Make a change for the better.

Broadening their perspective beyond personal health to the wellbeing of peoples, students explore what contributes to and constrains the wellbeing of communities. As a consequence they develop a solution to a problem they have identified, in their own community or further afield.

OUTCOMES //

PDHPE		GEOGRAPHY	MATHS	OTHER
SC5-2VA	A student shows a willingness to engage in finding solutions to science-related personal, social and global issues, including shaping sustainable futures			
SC5-3VA	A student demonstrates confidence in making reasoned, evidence-based decisions about the current and future use and influence of science and technology, including ethical considerations			
SC5-8WS	A student applies scientific understanding and critical thinking skills to suggest possible solutions to identified problems			

YEAR 10 | TERM 2

COURSE //

Writers' Studio: Novella

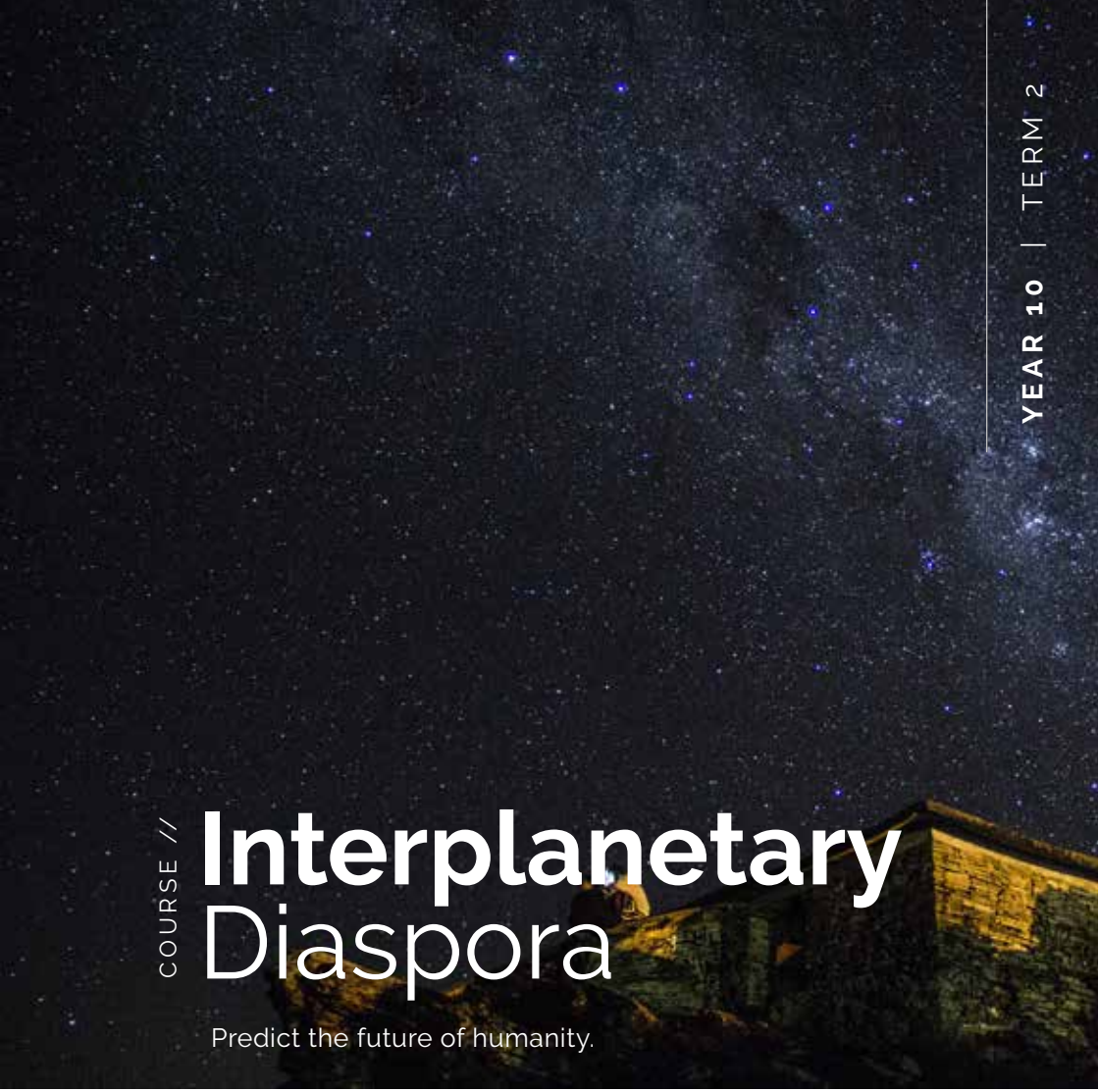
Write the great Australian novella, in ten weeks.

A novella is a creative work of anywhere between 7,500 and 40,000 words - an ambitious undertaking for any writer. In this course, students work toward a full draft of their own novella - working individually as well as critiquing each other's work.

OUTCOMES //

	ENGLISH	OTHER
EN5-4B	A student effectively transfers knowledge, skills and understanding of language concepts into new and different contexts	
EN5-5C	A student thinks imaginatively, creatively, interpretively and critically about information and increasingly complex ideas and arguments to respond to and compose texts in a range of contexts	
EN5-6C	A student investigates the relationships between and among texts	

Schoolhouse



COURSE //

Interplanetary Diaspora

Predict the future of humanity.

Through numerous disciplinary lenses, students examine the possibility of humanity leaving the planet to inhabit other places in the universe. The course examines topics such as the astrophysics of spaceflight, the sociological requirements for civilisation, and the potential of sustainable environments and ecosystems.

SCIENCE	GEOGRAPHY	OTHER

YEAR 10 | TERM 3

COURSE //

Start-up Crash Course

Become an entrepreneur.

In this course, students are mentored in starting an enterprise by commercial entrepreneurs, social entrepreneurs and leaders of local incubators. Over the ten weeks they identify a possible business opportunity, develop a business plan, validate the potential, and finish up by pitching it to potential investors.

OUTCOMES //

MATHS	ENG.	OTHER
MA5.1-4NA	A student solves financial problems involving earning, spending and investing money	
MA5.2-4NA	A student solves financial problems involving compound interest	

Schoolhouse

COURSE //

Pure Maths

Build skills in algebra, indices, quadratic expressions and trigonometry.

In this course, students build competencies in areas of Mathematics that cannot easily be authentically incorporated into larger projects. These include a range of algebraic methods, indices, quadratic expressions, and trogonometry. The course involves self-study of relevant online resources and small group discussion and tutoring. As a final product, each student produces a paper of their own devising demonstrating their mastery of the content.

OUTCOMES //

	MATHS	OTHER
MA5.1-1WM	A student uses appropriate terminology, diagrams and symbols in mathematical contexts	
MA5.1-2WM	A student selects and uses appropriate strategies to solve problems	
MA5.1-3WM	A student provides reasoning to support conclusions that are appropriate to the context	
MA5.1-5NA	A student operates with algebraic expressions involving positive-integer and zero indices, and establishes the meaning of negative indices for numerical bases	
MA5.1-10MG	student applies trigonometry, given diagrams, to solve problems, including problems involving angles of elevation and depression	
MA5.2-6NA	A student simplifies algebraic fractions, and expands and factorises quadratic expressions	
MA5.2-7NA	A student applies index laws to operate with algebraic expressions involving integer indices	

YEAR 10 | TERM 3

COURSE //

Senior Class Project

Put a ding in the universe.

Having worked on a range of term-long projects individually and in groups, the class will spend the last half of Year 10 working on a collective project. The only constraints are that the whole class must be involved, and that the project must produce something that has a significant impact outside of the school.

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COURSE //

Mathematics **Extension**

Prepare yourself for advanced mathematics in future years.

Students wishing to pursue advanced levels of maths take this course in their final Personal Project block. It involves self-study of online resources, group discussion and individual support.

OUTCOMES //

MA5.3-1WM	A student uses and interprets formal definitions and generalisations when explaining solutions and/or conjectures
MA5.3-2WM	A student generalises mathematical ideas and techniques to analyse and solve problems efficiently
MA5.3-3WM	A student uses deductive reasoning in presenting arguments and formal proofs
MA5.3-4NA	A student draws, interprets and analyses graphs of physical phenomena
MA5.3-5NA	A student selects and applies appropriate algebraic techniques to operate with algebraic expressions
MA5.3-6NA	A student performs operations with surds and indices
MA5.3-7NA	A student solves complex linear, quadratic, simple cubic and simultaneous equations, and rearranges literal equations
MA5.3-8NA	A student uses formulas to find midpoint, gradient and distance on the Cartesian plane, and applies standard forms of the equation of a straight line
MA5.3-9NA	A student sketches and interprets a variety of non-linear relationships
MA5.3-10NA	A student recognises, describes and sketches polynomials, and applies the factor and remainder theorems to solve problems
MA5.3-11NA	A student uses the definition of a logarithm to establish and apply the laws of logarithms
MA5.3-12NA	A student uses function notation to describe and sketch functions
MA5.3-13MG	A student applies formulas to find the surface areas of right pyramids, right cones, spheres and related composite solids
MA5.3-14MG	A student Applies formulas to find the volumes of right pyramids, right cones, spheres and related composite solids
MA5.3-15MG	A student applies Pythagoras' theorem, trigonometric relationships, the sine rule, the cosine rule and the area rule to solve problems, including problems involving three
MA5.3-16MG	A student proves triangles are similar, and uses formal geometric reasoning to establish properties of triangles and quadrilaterals
MA5.3-17MG	A student applies deductive reasoning to prove circle theorems and to solve related problems
MA5.3-18SP	A student uses standard deviation to analyse data
MA5.3-19SP	A student investigates the relationship between numerical variables using lines of best fit, and explores how data is used to inform decision-making processes

COURSE //

Thesis

Write an original long-form essay on a topic of interest.

This course gives students the opportunity to conduct a sustained piece of research and writing on a chosen topic. This allows students to further explore an particular area of interest from any subject or combination of subjects. The research may take any form, and the resultant thesis can be written for publication in any suitable location.

YEAR 10 | TERM 4

COURSE //

School Improvement Project

Make a change to improve your school for future students.

Having been at the school for almost four years, students are invited to collaboratively identify one or more ways in which the school experience could be improved. These may be specifically related to this school, or schooling more generally. Using a design thinking process, students develop and implement solutions to improve the school.

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For more information, contact us at
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