

IMMERSIVE LEARNING EXPERIENCES

IMVR Across the Curriculum



Lumination is revolutionising the way we teach, learn & work.

Lumination Learning Labs provide collaborative immersive learning environments that deliver world class educational outcomes.

Inside a Lumination Learning Lab, students get the opportunity to learn through experiences. Our Education Team have carefully selected experiences that are built to deliver exceptional educational outcomes for students.

Subject areas include:

- Science
- Humanities and Social Sciences
- The Arts
- Mathematics
- Technologies
- English
- Languages
- Health and Physical Education

The Education team have provided: a description of each experience and how they can be utilised in the classroom, learning outcomes, and classroom scenarios with direct links to the curriculum.

This is only a short list of the many experiences educators can utilise inside a Lumination Learning Lab. Discover more experiences and lesson plans on the Lumination Education Centre.

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IMVR Learning Outcomes



BBC'S Home Spacewalk ●●

BBC's Home Spacewalk is an immersive simulation experience where students will learn how to be a novice astronaut in the International Space Station, while trying to complete required tasks in this interactive virtual environment.

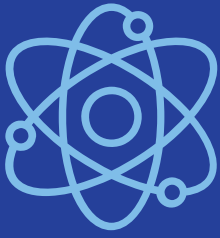
Classroom Curriculum

In the Primary classroom setting, BBC's Home Spacewalk will enable students to experience what it's like to observe the 'Earth as part of a system of planets orbiting around a star (the sun)' (Year 5 Earth and Space Sciences, ACSSU078). In the Secondary classroom, students will be able to observe how 'change to an object's motion is caused by unbalanced forces, including Earth's gravitational attraction, acting on the object (Year 7 Physical Sciences, ACSSU11). Or, in Year 10, students will be able to see that 'The motion of objects can be described and predicted using the laws of physics' (Physical Sciences, ACSSU229) and 'Advances in scientific understanding often rely on technological advances and are often linked to scientific discoveries' (Nature and development of science, ACSHE192).



Case Study

During the 'Space Exploration/Mars Mission' immersive learning experience in our Innovation Lab, students used BBC Home Spacewalk as part of an empathising exercise as they tackled the real world issue of why and how humans explore space using a design thinking framework. After experiencing what it's like to be in outer space using immersive learning, students designed their own VR creation prototypes of space exploration solutions such as a Mars colony for human habitation. BBC Home Spacewalk may also be used in other learning areas, such as English (as a simulation experience to prompt narrative, poetry, and other creative writing) and Human Society and its Environment (as an immersive learning experience connected with human explorations).



The F-10 Australian Curriculum

Science provides opportunities for students to develop an understanding of: important science concepts and processes; the practices used to develop scientific knowledge; science's contribution to our culture and society, and its applications in our lives; scientific inquiry methods; and a foundation of knowledge across the disciplines of science. Science also develops the ability to communicate scientific understanding, and use evidence to solve problems and make decisions.

Other Examples for Science



Ocean Rift ● ●

This app is a vivid immersive experience that enables students to explore the underwater world with dolphins, sharks, orcas, turtles, sea snakes, rays, manatees, sea lions, whales, and even extinct prehistoric reptiles. There are 12 habitats available, with environments ranging from coral reefs, mangrove swamps and shipwrecks, to the deep sea, Arctic and Atlantis.



HoloLab Champions ●

This app is a quiz game show-style experience that helps students to review concepts in Chemical Sciences by completing lab experiments. It is a fun, interactive approach to checking for prior learning or for conducting revisions for exam preparations in the Secondary classroom.



Newton's House of Forces ●

This app encourages students to play with a Tesla Coil, and experiment with Newton's laws of motion using giant circus balls, force fields, and traction beams as part of their exploration of Physical Sciences.



The Body VR ●

This app enables students to learn about cellular studies (Year 7, ACSSU149), as well body systems and human anatomy (Year 8, ACSSU175) for Biological Sciences in an immersive manner. This app may be used as an introductory or review activity for Secondary students.

IMVR Learning Outcomes

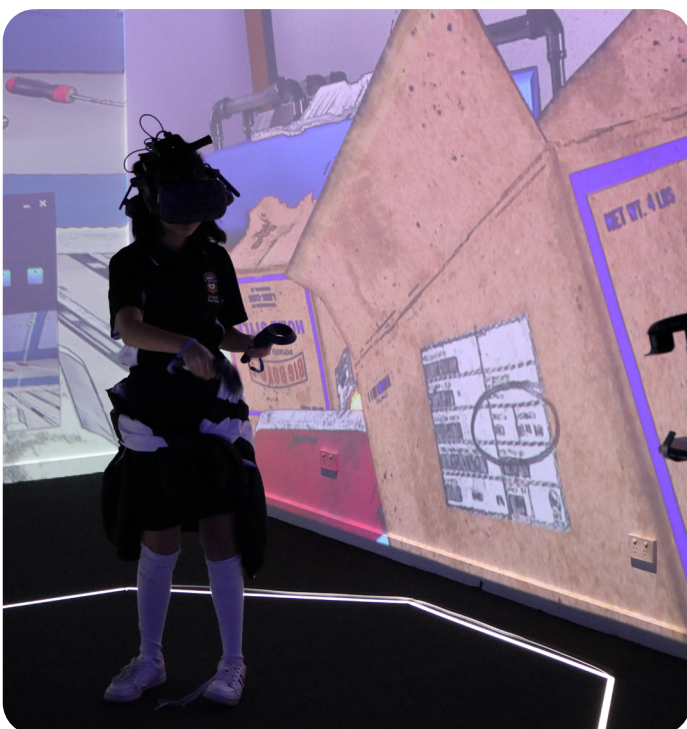


Google Earth VR ●●

Google Earth VR is a virtual reality application that lets you see the world's cities, landmarks, and natural wonders in an immersive environment. Students may choose cinematic tours and destinations that will take them on virtual excursions to the Amazon River, the Manhattan skyline, the Grand Canyon, the Swiss Alps, and more. It will enable students to explore Geography, Maths concepts, and Earth and Space Sciences.

Classroom Curriculum

In the Geography strand of the Australian Curriculum for Years 7 & 8, the skill of 'Interpreting, analysing, and concluding' targets this specific point: "Interpret geographical data and other information using qualitative and quantitative methods, and digital and spatial technologies as appropriate, to identify and propose explanations for spatial distributions, patterns and trends, and infer relationships (ACHGS051, ACHGS059)." Students can use Google Earth as a way to understand and identify contrasting places to identify differences in housing density, to investigate landforms and their features, and/or to observe, describe and contrast the spatial associations of geographical phenomena.



Case Study

'Google Earth' is one of the most powerful immersive VR apps available for educators. Students can go on virtual excursions anywhere in the world and learn about landmarks, cities, countries, environments, and much more in an engaging manner. One student has written this as part of their reflection on the use of Google Earth: "Travelling the world may be fantasy for many people but it seems as though I was really there in Paris! You could just see all the hustle and bustle just through the headset. I was over the moon! It was a real-life experience, well at least [it] felt real and you know what was a plus we could move around seeing world famous landmarks from different angles."



The F-10 Australian Curriculum

Humanities and Social Sciences comprises five subjects. Civics and Citizenship ensures students have the skills and values to become active and informed citizens. Economics and Business explores aspects of economics and business that affect daily life. Geography provides opportunities to investigate, analyse, and explain the characteristics of geographical locations. History provides opportunities to investigate Australian and world history.

Other Examples for Human Society and its Environment



Trash Time ●●

This app is a simulation experience that teaches students how to recycle and learn about materials in an immersive gamified learning environment. It shows how trash accumulates CO₂ gas, which is one of the leading causes of climate change. Used in Science or Design and Technologies as part of studies on materials and resources. It may also be used in Maths for calculating money and practising basic data and statistics.



The Book of Distance ●

This app tells the migration story of Yonezo Okita who left his home in Japan and began a new life in Canada. It sheds light to various cultural and societal issues, including war and racism. This may be used as part of World War II studies in Year 10 (ACDSEH024).



BBC's 1943 Berlin Blitz ●

This app is an immersive simulation experience that contains real audio recordings from a Lancaster bomber as it navigates a most dangerous journey. This experience makes learning history more real and captivating in a Secondary classroom (Year 10, Modern History). In English, this may also be used as a prompt for creative writing or as an empathising tool when studying literature within the World War 2 era.



Nefertari: Journey To Eternity ●

This app provides a unique virtual experience for Secondary students studying Ancient History. Students get to step inside Nefertari's tomb and immerse themselves in the story of its art, history, construction, and mythology through interactive elements.

IMVR Learning Outcomes



Tilt Brush ●●

Tilt Brush or its open-sourced version, Open Brush, enables students to paint in an immersive 3D space with VR using a number of digital materials, including three-dimensional brush strokes, stars, light, electricity, and even fire.

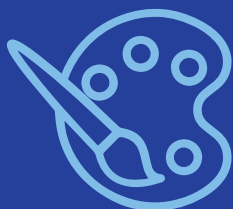
Classroom Curriculum

In both the Primary and Secondary classrooms, Tilt Brush or Open Brush may be used to experiment with visual arts conventions and techniques in an immersive environment (ACAVAM115, ACAVAM119, ACAVAM126). Students may create original artworks or do their interpretations of famous artworks using VR. This tool may also be used across other learning areas as a way to show student understanding of a topic or to create prototypes of designs. For example, in Science, students learning about climate change may create a virtual sculpture of the coral reef and show the impact of climate change with their creation. In English, students may create their interpretation of a piece of literature by creating a VR artwork.



Case Study

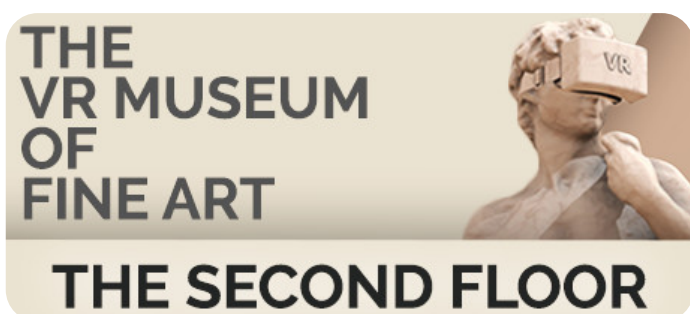
Tilt Brush or Open Brush is a fantastic tool for VR creation. During exploration of materials for expressing intent and messaging in Visual Art, students are able to test all the different digital paint tools that are available on the app. Students are able to explore various digital materials as a way to communicate ideas in such a way that can't be replicated easily in other formats. For example, to express heat or passion, students can use the 'Fire' or 'Electricity' brush. To express joy, students can use 'Bubbles' or 'Rainbow'. They are then able to present their creations in an immersive environment to allow their audience to experience their ideas in an innovative manner.



The F-10 Australian Curriculum

The Arts is a learning area that draws together related but distinct art forms. Each of these art forms involves different approaches to arts practices and critical and creative thinking that reflect distinct bodies of knowledge, understanding and skills. The curriculum examines past, current and emerging arts practices across a range of cultures and places. This learning area comprises five subjects: Dance, Drama, Media Arts, Music, and Visual Arts.

Other Examples for Creative Arts



IL DIVINO: Michelangelo's Sistine Ceiling in VR ●●

This app enables students to tour the Sistine Chapel like never before, simply pointing to paintings to learn about them. They can also climb the painter's scaffold to inspect *The Creation of Adam* up close. It can be used to 'Analyse a range of visual artworks from contemporary and past times to explore differing viewpoints and enrich their visual art-making' (Years 9 & 10, ACAVAR131).



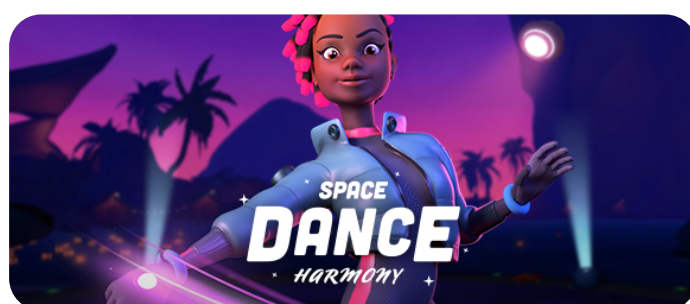
Masterpiece Studio Pro ●●

This app enables students to design, create, and animate 3D models, using various materials. It addresses curriculum points in the Creative Arts learning area (Visual Art and Media Arts). In Media Arts, it may be used for developing skills with media technologies in the Primary and Secondary classrooms (ACAMAM059, ACAMAM063, ACAMAM068, ACAMAM075).



Lyra VR ●●

This app enables students to create, perform, and record compositions, using different elements of music, in an immersive virtual environment. The app may be used to create and perform music using technologies (Years 5 & 6, ACAMUM089), change specific elements of a musical piece (Years 7 & 8, ACAMUM093), and manipulate combinations of musical elements in a range of styles, using technology and notation (Years 9 & 10, ACAMUM100).



Space Dance Harmony ●●

This app enables students to learn dance harmony to popular music and choreography. It allows students to practise dance sequences and elements (ACADAM005, ACADAM009), as well as practise and refine technical skills in style-specific and genre-specific techniques in an immersive environment (ACADAM015, ACADAM022).

IMVR Learning Outcomes

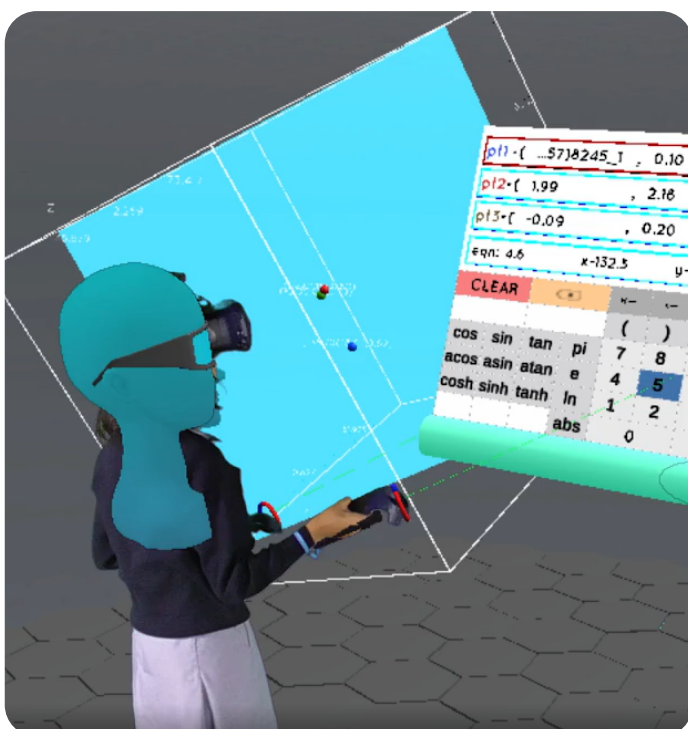


Skytropolis ●

Skytropolis enables students to build a vertical mega city where they are able to control its design, architecture, economy, and sustainability. This may be used on a desktop or laptop computer or in a room- scale VR environment.

Classroom Curriculum

Skytropolis may be used in the Secondary classroom as a way for students to explore money and financial mathematics. For example, in Year 7, students may 'Investigate and calculate 'best buys', with and without digital technologies (ACMNA174)' or in Year 8, students can 'Solve problems involving profit and loss, with and without digital technologies (ACMNA189)' by experiencing what it's like to build their own vertical cities and solving business and financial challenges throughout the task.



Case Study

In our Business Innovation and/or Sustainable Smart Cities program, we use Skytropolis to give students the opportunity to experience what it's like to design and build an effective vertical city using various considerations, such as costs, sustainability, living conditions, and more. While going through the tasks, students get to practise working on maths operations. Students can also then use this experience when creating a prototype of a Business Innovation idea or a Smart City design.



The F-10 Australian Curriculum

Mathematics provides students with essential mathematical skills and knowledge in number and algebra, measurement and geometry, and statistics and probability. It develops the numeracy capabilities that all students need in their personal, work and civic life, and provides the fundamentals on which mathematical specialties and professional applications of mathematics are built.

Other Examples for Mathematics



Mall Town ●

This app encourages gamified learning of the Money and financial mathematics strand in the Primary classroom. It enables students to make financial decisions in building a shopping centre in a virtual town.



Number Hunt ●

This app is a maths shooter game that enables students to practise their basic number facts in addition, subtraction, multiplication, and division.



Neotrie VR ●

This app enables Secondary students to explore a variety of learning points in the 'Measurement and Geometry' strand across the different year levels. Some sample activities in the app include: Working on spatial symmetries of 3D figures, translations, rotations, reflections, etc; Construction of polyhedra; and modelling 2D and 3D geometry, among others.



Calcflow ●

Calcflow is an app that allows students to learn the foundations of vector calculus in an immersive environment. Students can manipulate vectors, explore vector addition and cross product, and look at a double integral of a sinusoidal graph in 3D.. This is useful in Senior Secondary maths studies, particularly, in the area of Mathematical Methods focusing on the development of the use of calculus and statistical analysis.

IMVR Learning Outcomes

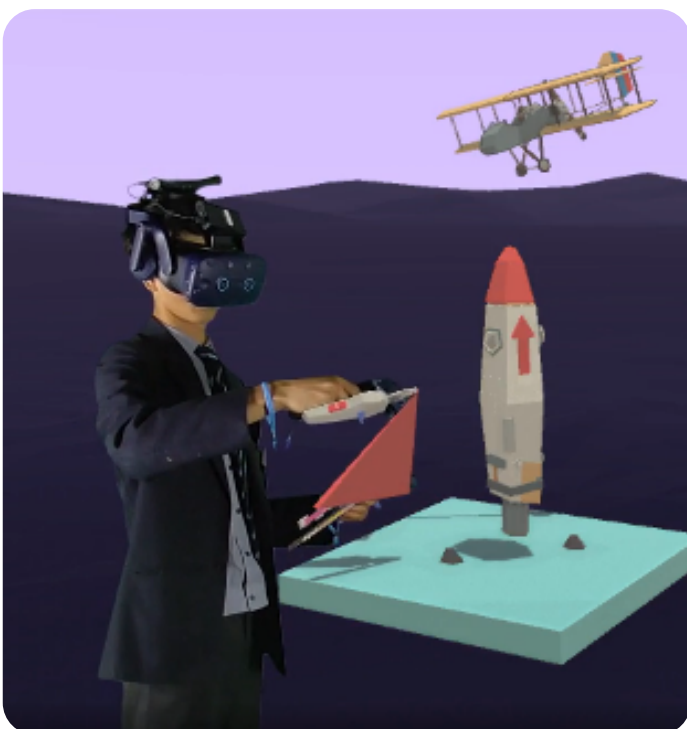


Blocks ●●

Blocks is a simple 3D modelling application in virtual reality. Students can design and prototype solutions or ideas and export it to another application to use.

Classroom Curriculum

In the Primary and Secondary Design & Technologies classrooms, students can use Blocks to 'Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques (ACTDEP025, Year 5 & 6 or ACTDEP036, Year 7 & 8)' or for 'Developing project plans using digital technologies to plan and manage projects individually and collaboratively taking into consideration time, cost, risk and production processes (ACTDEP052, Year 9 & 10)'.



Case Study

Blocks may be used to create a prototype of a design solution in any subject area. This enables students to develop the necessary skills to 'think in 3D', which is an important part of learning that doesn't always get addressed in traditional teaching that's usually 2D-focussed. The ability to think and create in 3D helps to prepare students for jobs that are increasingly dependent on emerging technologies. For example, many transportation companies are creating prototypes of their vehicles using VR solutions, as they are able to design them in more detail and in a lifesize format. Here, a student is remixing a rocketship design in our labs when studying transportation.

Other Examples for Design and Technology



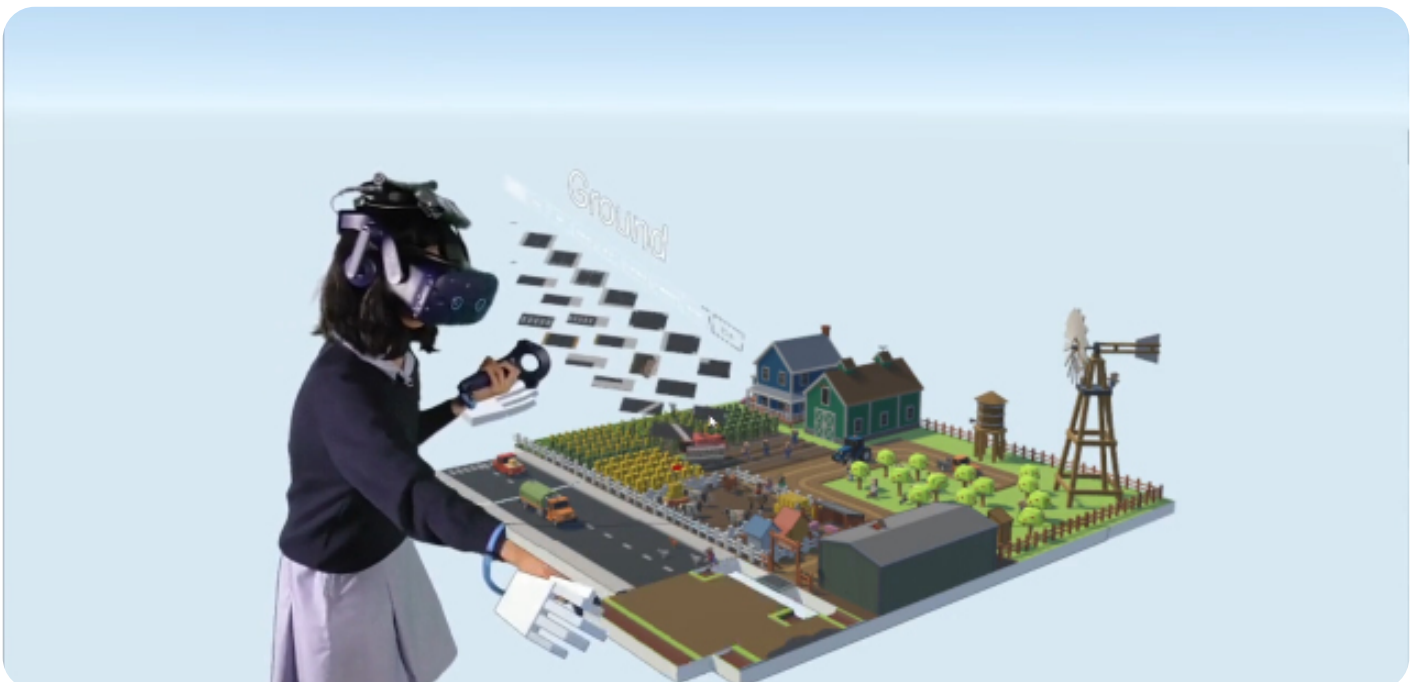
Tiny Town ●

This app is an app that enables students to create models of design solutions in a virtual reality environment. This may also be used in exploring materials in a digital format, as well as for storytelling in English and for studying mapping and location in Maths.

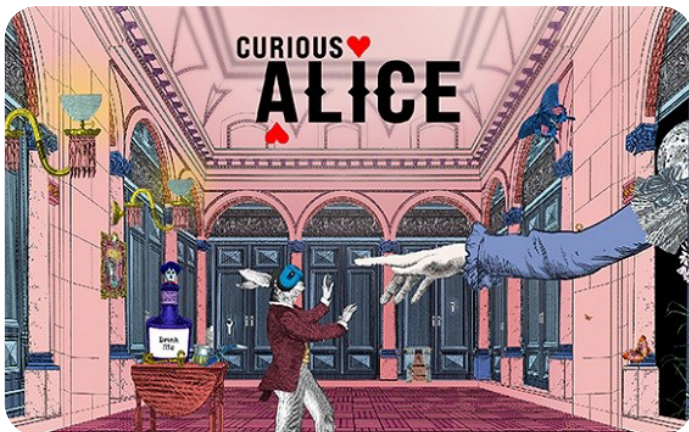


Thingamajig ● ●

In this app, students can explore the different parts of inventions to understand their mechanics and design their own VR experience, applying basic laws of physics to objects. Students can use Thingamajig to 'Critique needs or opportunities for designing and explore and test a variety of materials, components, tools and equipment and the techniques needed to produce designed solutions (ACTDEP014, ACTDEP024, ACTDEP035, ACTDEP048).



IMVR Learning Outcomes



Curious Alice ●●

Curious Alice is an immersive, interactive experience of the legendary tale, 'Alice in Wonderland'. Students can follow their own personal White Rabbit companion, hunt for missing objects, solve the Caterpillar's mind-bending riddles, visit the Queen of Hearts' croquet garden, and experience other classic moments.

Classroom Curriculum

In the Primary or Secondary classroom, students can explore the story of Alice in Wonderland with the Curious Alice VR experience. Within the Literature strand in English, they will be able to 'Use comprehension strategies to interpret and analyse information and ideas, comparing content from a variety of textual sources including media and digital texts (ACELY1713, ACELY1723)' in the sub-strand, 'Interpreting, Analysing, and Evaluating'.



Case Study

Curious Alice is used within the Lab as a tool for exploring narrative in a virtual and immersive setting. Students are able to interpret literature, such as 'Alice in Wonderland' through their own observations and encounters with the story, taking the words off the page and elevating their learning experience. Students use this experience to develop their own creativity and write their own narratives or imaginative pieces.



The F-10 Australian Curriculum

The English curriculum is built around the three interrelated strands of language, literature and literacy. Teaching and learning programs should balance and integrate all three strands. Together, the strands focus on developing students' knowledge, understanding and skills in listening, reading, viewing, speaking, writing and creating.

Other Examples for English



Sommad ●

This app is a collaborative immersive experience where students get to practise communication skills in small groups. The student using the IMVR headset listens to instructional language from their peers to go through the maze and complete tasks. This fits in the 'Literacy' strand and the 'Interacting with Others' sub-strand of the curriculum in the Primary classroom.



Virtual Presenter Pro ● ●

This app enables students to practise public speaking skills on a range of topics in front of a virtual audience. Their presentation will then be given feedback on the number of words used, the direction they're facing when presenting, and any filler words used. To make sure this works, microphones should be enabled on the IMVR headsets.



The Divergent Series: Allegiant VR Experience ●

This app is a 10-minute immersive story based on the trilogy book series-turned-movie, Divergent. It would be a good additional learning experience during 'Literature' studies in secondary school.



The Line ●

This app is a 20-minute interactive immersive story that enables students to experience media and literature in an innovative way. It tells the story of two miniature dolls, Pedro and Rosa set in 1940s São Paulo. This allows students to explore literature and culture in a new way, enhancing their learning experience and understanding of the story.

IMVR Learning Outcomes



Mondly ●●

Mondly is a language-learning app in an immersive environment with approximately 30 languages available, including English, Spanish, German, French, Italian, Arabic, Russian, Korean, Japanese, Chinese and more. Students can take part in realistic dialogues inspired by authentic events, then get instant feedback on pronunciation and suggestions on how to enrich vocabulary.

Classroom Curriculum

Mondly is a great tool that can enhance student learning and engagement in various languages. It may be used as a way to encourage students to practise their language skills and improve vocabulary. This app needs the microphone to be activated.



Case Study

During the 'Mondly' VR learning experience in the Lab, students practise their chosen language in realistic overseas scenarios; from making casual conversation on a train, getting directions in a taxi and ordering food at a restaurant. Students are able to immerse themselves into their own learning in realistic and useful scenarios, in ways not possible in a regular classroom. This assists students in having a greater understanding of language studies, allowing students to be immersed within the cultures they are learning about.

The F-10 Australian Curriculum

Languages is designed to enable all students to engage in learning a language. The design of the Australian Curriculum recognises the features that languages share as well as the distinctiveness of specific languages. The key concepts of language, culture, and learning, as described in the Shape of the Australian Curriculum: Languages, underpin the learning area and provide the basis for a common rationale and set of aims for all languages.

Other Examples for Languages



Learn Spanish VR ●

This app is a simple language learning application in virtual reality. Students get to walk around an immersive environment where they learn the Spanish words for different objects. This may be used as an activity to help students increase their vocabulary.



You, Calligrapher! ●

This app is a writing and art app designed to help students practise their Chinese calligraphy skills using virtual reality. It is an engaging activity that can add value to their language learning skills.



IMVR Learning Outcomes

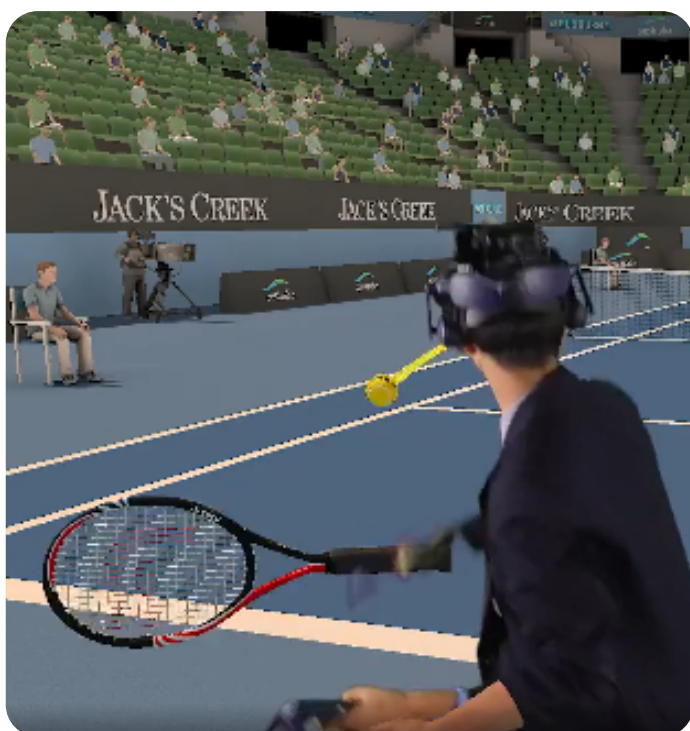


All-In-One Sports VR ●●

In All-In-One Sports VR, students can experience competing in 11 sports in virtual reality: Baseball, Archery, Ping Pong/Table Tennis, Basketball, Bowling, Badminton, Golf, Dart, Billiard, Boxing, and Tennis. The game format is similar to official Olympic rules, so students can learn sports training, rules, and vocabulary.

Classroom Curriculum

All-In-One Sports VR is a great addition to Physical Education lessons, especially if there are space and resource constraints. Whilst it does not replace traditional sports learning within the 'Movement and Physical Activity' strand, this app enables students to engage in developing movement skills and becoming more familiar with the rules and mechanics of different sports.



Case Study

All-In-One Sports VR is used within the Lab to allow students to explore different sports and the need to stay physically active. During the pandemic, the app is used as a safer alternative to keeping mentally and physically fit and healthy with minimum contact. It provides a cost-effective, space-efficient and accessible method to participate in a range of sports without the need for expensive equipment.



The F-10 Australian Curriculum

In Health and Physical Education, students develop skills, knowledge, and understanding to strengthen their sense of self, and build and manage relationships. They learn to build on personal and community strengths and assets to enhance safety and wellbeing. They critique and challenge assumptions and stereotypes, and learn to navigate health-related sources, services, and organisations. Students also acquire movement skills and concepts that enable confident participation in a range of physical activities.

Other Examples for PDHPE



Aussie Sports Virtual Reality ●●

This app is a good immersive learning experience for students looking at different sports played in Australia - Aussie Rules Football (AFL), cricket, soccer, basketball, and rugby. It has some basic game experiences and some 360° videos that look at different sporting events.



First Person Tennis ●●●

This app is a tennis simulator where students can practise various skills in this sport. It is aimed to help students to develop tactical and technical skills in tennis.



Deep States VR ●●●

This app is a simulated experience that offers audio-visual stimuli for students. This may be used as a mindfulness/ meditation exercise in Health studies, which may also link into other topics of study, such as poetry (English) and visual art (Creative Arts).



Self Knowledge VR ●●●

This app is a VR experience that offers a series of tasks based on real-world psychological theories. Using the data provided in the experience, students will be given basic insights about themselves that can be further explored during Health studies.



**Revolutionising the way we
teach, learn & work.**

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