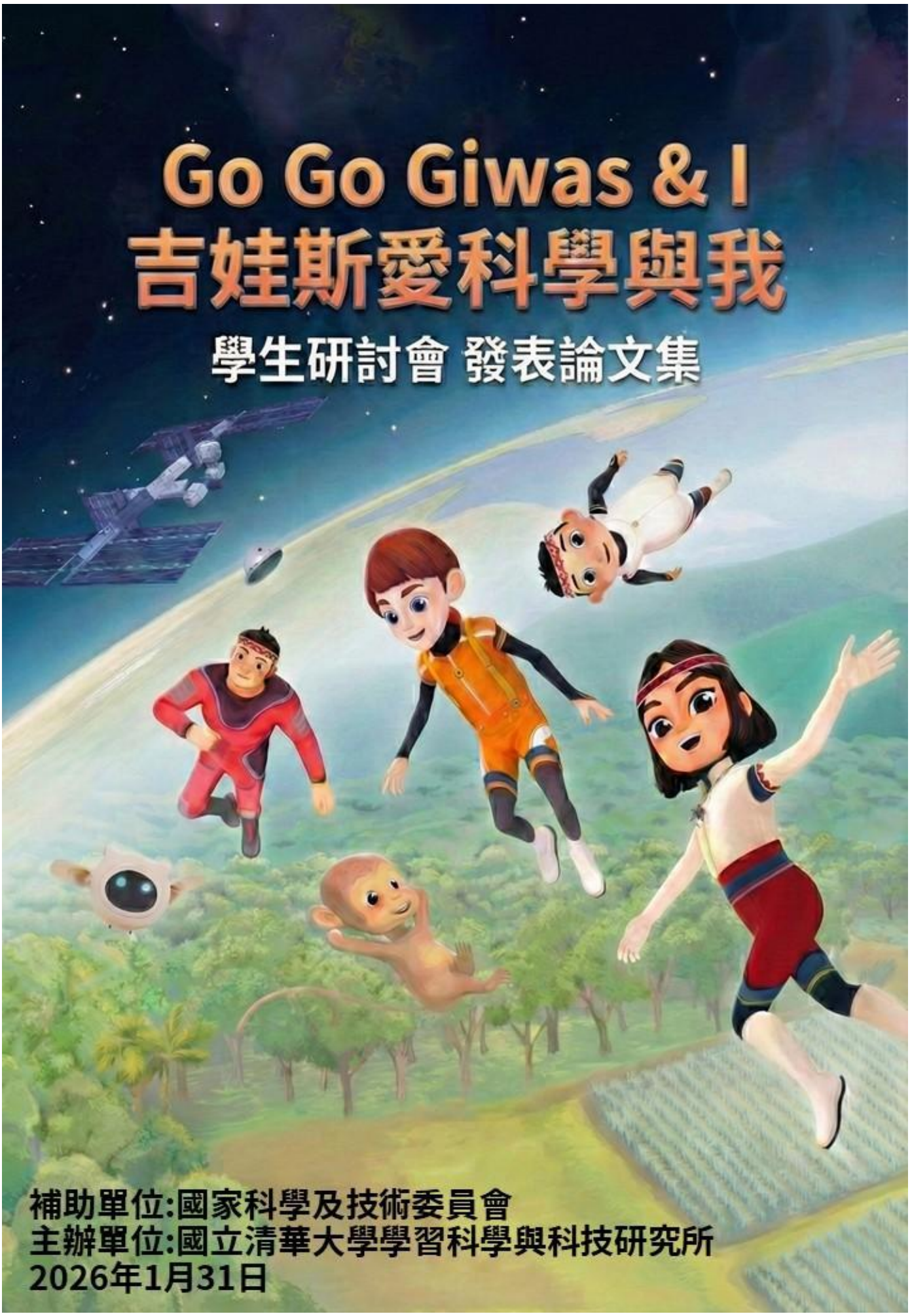
Go Go Giwas & I
吉娃斯愛科學與我

學生研討會 發表論文集



補助單位:國家科學及技術委員會
主辦單位:國立清華大學學習科學與科技研究所
2026年1月31日

主辦人 序

對許多學習者而言，科學往往被視為遙遠、困難，甚至只屬於少數人的世界。然而，我始終相信，科學其實源自每一個人對生活的觀察、對自然的好奇，以及對未知的提問能力。原住民族世代累積的生活智慧，正是最真實、也最貼近土地的科學實踐。

《吉娃斯愛科學》動畫系列，從一開始便希望所有的人用文化理解科學，並在故事中看見「我也可以參與科學」。這不只是一部動畫，更是一座橋樑，連結學校教育、個人生命經驗與多元文化世界觀。

「吉娃斯愛科學與我」研討會，特別為學生打造一個安全而開放的科學學習平台。每一篇論文皆經一位臺灣學者與一位以英語為母語的英語教師評選而出。在此平台，論文發表不只是成果展示，而是自我探索的過程，更是說出自己如何理解科學、文化與世界的起點。

本論文集中可以看見許多真誠而動人的研究與書寫。有人從動畫角色談學習動機，有人從部落經驗重新詮釋科學概念，也有人嘗試將科技與文化價值結合。這些作品提醒我們，科學不是只有一種語言，也不是只有一條道路。

我要特別肯定所有投稿與發表的同學。今天您所寫下的每一篇論文，都是未來持續提問、持續學習的起點。也期待你們在未來的道路上，能帶著自己的多元文化根基與科學素養，學習原住民族文化，走向更寬廣的世界。

傅麗玉

國立清華大學
學習科學與科技研究所 教授
原住民族科學發展中心 主任
《吉娃斯愛科學》動畫系列製作人

2026 年 1 月 21 日於清大竹屋

Foreword by the Organizer

For many learners, science is often seen as distant, difficult, and even belonging only to a select few. However, I have always believed that science is rooted in everyday observations, curiosity about nature, and the ability to ask questions about the unknown. The wisdom that Indigenous peoples have developed over generations is, in fact, one of the most authentic and grounded forms of scientific practice.

From the very beginning, the *Go Go Giwas* animation series has aimed to help everyone understand science through the lens of culture, and to see within the stories that "I, too, can be part of science." This is more than just an animation; it is a bridge that connects school education, personal life experiences, and a worldview rich in cultural diversity.

The Go Go Giwas and I Conference is especially created as a safe and open platform for students to engage in scientific learning. Each paper was selected through the joint review of one Taiwanese scholar and one native English-speaking English teacher. On this platform, presenting a paper is not just about presenting results. It is a journey of self-exploration, and more importantly, a courageous step in expressing how one understands science, culture, and the world.

In this proceeding, you will find many sincere and moving pieces of writing. Some explore learning motivation through the lens of *Go Go Giwas* animation characters, others reinterpret scientific concepts through experiences in their communities, while still others attempt to integrate technology with cultural values. These works remind us that science is not confined to a single language or a single path.

I especially want to recognize all the students who submitted and presented their work. Each paper you have written is not just a product of effort, but the beginning of a lifelong journey of inquiry and growth. May you carry with you a strong foundation rooted in cultural diversity, enriched by scientific literacy, and guided by the wisdom of Indigenous cultures as you step confidently into a broader world.

Fu, Li-Yu
Professor, Institute of Learning Sciences and Technologies
Director, Center for Indigenous Science Development
National Tsing Hua University
Producer, *Go Go Giwas* animation series
January 21, 2026, at Bamboo House, NTHU

目錄

編號	報告主題	頁次
01	約定的刻印	1
02	《吉娃斯愛科學》觀後心得	3
03	我最喜歡吉娃斯	5
04	一起蓋穀倉學科學：分享讓世界更靠近	7
05	河流竟然會移動？！我和吉娃斯的科學發現	9
06	分享的暗號	11
07	智慧之橋—我對「彩虹橋約定」的心得	13
08	水果為什麼會變色？讓我們分享更多美味與快樂	15
09	槓桿原理	17
10	科技和傳統的融合	19
11	蓮葉效應	21
12	不同位置，一樣重要：我眼中的拼板舟精神	23
13	從小小螢火蟲學到的大勇氣	25
14	拼板舟教我的事：科學、文化與合作	27
15	小光點，大啟示：科學與親情的交會	29
16	燃燒的智慧，傳承的光	31
17	從部落的自然知識到教室的科學：我的雙軌學習旅程	33
18	新娘盪鞦韆 單擺運動	35
19	彩虹伴我走(光的折射)	37
20	知識的穀倉	39
21	《頂上有學問》重心	41
22	原住民族是天生的科學家－以《吉娃斯愛科學》中的拼板舟為例	43
23	與星月共舞的知識之樹：從《吉娃斯愛科學》看原民科學與西方科學的交會	45
24	走向外太空的原民智慧－以《吉娃斯愛科學》第四季第十集〈石板屋天窗〉探討原住民族科學思維與責任倫理	47
簡章		50
版權頁		56

報告主題	約定的刻印	
Report Topic	The Engraving of a Promise	
發表者學校	宜蘭縣立凱旋國民小學	
發表者	黃翎巧	Huang Ling-Chiao
指導者	陳淑華	Chen Shu-Hua
摘要	看完影片，我瞭解布農族板歷就是最後人類和月亮的約定。每一句話深深的刻印在木板上，也將這個故事烙印在世代子孫的心中最深處。菱形意指每日、直線意指祭祀、兩隻倒置的豬意指採收小米與小米入倉要獻給小米精靈，感謝天地的賜予，還有射耳祭、首飾祭等。 另外我也學到月亮本身其實是顆巨石，就算在太空站，也不一定會看見滿月；人需要光的反射才足以讓眼睛看見的物品傳到腦中呈現；當地球位於太陽與月亮之間，就可以看到眾所周知的滿月，但當月亮到太陽與地球之間，就會形成朔月。 在這一切中，我瞭解到：因為太空站一天會繞地球約十五次，所以太空人一天會看見許多次月亮。如同人山人海中，自己就像宇宙中的一個小點，渺小而不被注意，但每個人都截然不同。又如同每天都是新的開始，每分每秒都是不同的。月亮也是如此，雖然一天會被看見許多次，可是一切都在改變，月亮上最細微的動靜往往無法被察覺，這讓我學會細心與耐心，每個人的內心深處都有些動靜，我們必須去瞭解對方。 在吉娃斯他們回到地球後，終於找回布妮的最後一顆石珠，那意味著一個團隊中，每個人都缺一不可。另外我發現這世上微不足道的小事都在發生，那些事情看似沒有什麼，卻能改變未來。惡事與善事都是由小苗開始發芽的，應細心看向自己的未來，並放開眼界，認識這個世界，抱持著快樂的心，迎向徐徐微風，你會發現這世界有多美好!	

English Abstract	After watching the film, I came to understand that the Bunun Islulusan represents the final covenant between humankind and the Moon. Every word is deeply carved into the wooden board, and the story itself is engraved in the hearts of generations to come. The diamond shapes symbolize the passing of days; the straight lines represent rituals; and the two inverted pigs signify the harvest of millet and the offering of stored millet to the millet spirit, in gratitude for the blessings bestowed by heaven and earth. The Islulusan also records important ceremonies such as the Ear-Shooting Festival and the Ornament Festival. In addition, I learned that the Moon itself is actually a massive rock, and even from a space station, one does not necessarily see a full moon. Human beings can perceive objects only when light is reflected and transmitted to the brain through the eyes. When the Earth lies between the Sun and the Moon, we see the well-known full moon; when the Moon moves between the Sun and the Earth, a new moon is formed. Through all of this, I realized that because the space station orbits the Earth about fifteen times a day, astronauts can see the Moon many times within a single day. Amid vast crowds of people, I am like a tiny point in the universe—small and easily overlooked—yet every person is completely unique. Just as each day marks a new beginning and every second is different, so too is the Moon. Although it may be seen many times in one day, everything is constantly changing. The Moon's subtlest movements often go unnoticed, and this has taught me attentiveness and patience. Deep within every person's heart, there are quiet stirrings, and we must take the time to understand one another. When Giwas and her companions finally returned to Earth and recovered Bunny's last stone bead, it symbolized that in a team, every member is indispensable. I also came to realize that countless seemingly insignificant things are constantly happening in this world—things that may appear trivial, yet have the power to change the future. Both good and evil begin as tiny sprouts. We should look carefully toward our own future, broaden our horizons, and come to know the world. With a joyful heart, face the gentle breeze, and you will discover just how beautiful this world truly is.

報告主題	《吉娃斯愛科學》觀後心得	
Report Topic	"Go Go Giwas" Viewing Reflection	
發表者學校	臺東縣立寶桑國民小學	
發表者	孫小宇	Orad Sun
指導者	洪毓絜	Jessie Hung
摘要	今天我要分享《吉娃斯愛科學》第三季第六集「誰的眼淚在發光」。 故事開始時,吉娃斯因為斗腊不讓她去山海部落,她好難過又好生氣,就自己跑到森林裡。在森林裡,吉娃斯看到了螢火蟲,那些小小的亮光讓她心情慢慢變好了。我很懂吉娃斯的心情,因為有時候爸爸媽媽不答應我想做的事,我也會覺得很失望和難過。 看完這一集,我終於知道螢火蟲為什麼會發光了!原來螢火蟲發光有三個原因:第一是找朋友,第二是吸引另一半,第三是警告其他動物「不要吃我,我很難吃」。螢火蟲的光叫做冷光。它不會像電燈泡那樣發熱,所以螢火蟲就不會浪費太多力氣。老師告訴我們,螢火蟲只住在乾淨的地方。如果那裡被污染了,螢火蟲就會消失不見。所以我們要好好保護大自然,不可以隨便亂丟垃圾,一定要把環境保持乾淨,這樣才能一直看到美麗的螢火蟲。 這一集讓我印象最深刻的是,節目把吉娃斯的眼淚和螢火蟲的光拿來比較。眼淚是我們傷心時流出來的,但螢火蟲的光卻表示牠們正在努力過生活。螢火蟲就算在黑黑的夜晚,還是會努力發出明亮的光,一點都不放棄。這讓我學到,當我遇到困難的時候,我也要像螢火蟲一樣勇敢,不能輕易放棄。 看完這集,我不只學到螢火蟲的知識,還知道保護環境有多重要。我好希望有一天能看到好多好多螢火蟲在夜晚飛來飛去,像小星星一樣閃閃發光。那一定超級美麗又驚人!	

English Abstract	Today I want to share about "Go Go Giwas" Season 3, Episode 6, "Whose Tears Are Glowing." At the beginning of the story, Kiwas feels very sad and angry because Dolah won't let her go to the mountain and sea tribal area, so she runs into the forest by herself. In the forest, Kiwas sees fireflies, and those tiny little lights make her feel better little by little. I really understand how Kiwas feels because sometimes when my mom and dad don't let me do what I want, I also feel very disappointed and upset. After watching this episode, I finally know why fireflies glow! Fireflies glow for three reasons: first is to find friends, second is to attract a mate, and third is to warn other animals "don't eat me, I taste really bad." The firefly's light is called cold light. It doesn't get hot like a light bulb, so fireflies don't waste too much energy. My teacher told us that fireflies only live in clean places. If that place gets polluted, the fireflies will disappear. So we need to take good care of nature, we can't litter anywhere, and we must keep the environment clean so we can always see beautiful fireflies. What impressed me most about this episode is how the show compares Kiwas's tears with the fireflies' light. Tears come out when we're sad, but firefly light shows they are trying hard to live their lives. Even in the dark dark night, fireflies still work hard to glow brightly and never give up. This taught me that when I face difficulties, I should also be brave like fireflies and never give up easily. After watching this episode, I not only learned about fireflies, but also learned how important protecting the environment is. I really hope one day I can see lots and lots of fireflies flying around at night, shining bright like little stars. That would be super beautiful and amazing!

報告主題	我最喜歡吉娃斯	
Report Topic	GO GO GIWAS is my favorite	
發表者學校	新竹縣立嘉豐國民小學	
發表者	吳予信	Rex Wu
指導者	張羅以	Lavender Chang
摘要	我記得我第一次看到吉娃斯的卡通，是媽媽介紹給我看的。當時我覺得好好看，很想再看一集。後來我居然發現學校的老師也會放吉娃斯給我們看！現在我已經快要把每一集都看完了。 我很喜歡看吉娃斯，其中我最喜歡的就是乃奈偷香蕉的那一集。因為我很喜歡動物，而乃奈和嘎魯是我在吉娃斯中最喜歡的角色。在＂分享的暗號＂中，乃奈出現了很多次，還發生了有趣的香蕉事件。我不但會在電視上收看吉娃斯，而且因為我太喜歡它了，媽媽還送了我一本吉娃斯的筆記本。她說那是學校的教授給她的，我才知道，原來媽媽學校的教授就是製作吉娃斯的人，我覺得好厲害。 我看了吉娃斯之後，學會了很多知識，例如怎麼使用稻草和竹管製作地下儲藏室。我還知道怎麼做樹皮布，在做樹皮布之前，要砍下噹噹樹。但是在砍樹之前要先跟噹噹樹說為什麼要砍它，並放一顆石頭，希望她的傷口早日康復。看完吉娃斯之後我最想做的是一座儲藏地瓜的地下室，因為這樣我就可以有很多地瓜吃，不怕它們壞掉了，如果成功的話，一定很有成就感！	

English Abstract	I remember the first time my mom let me watch GO GO GIWAS on TV. I felt very excited and immediately wanted to watch more episodes of this animation. Later, I was surprised to find that sometimes my teacher also showed GO GO GIWAS in class, which made me like it even more. Now, I have almost finished watching all of the episodes. I think GO GO GIWAS is very interesting, and my favorite episode is the one about the stolen bananas. I have watched this episode so many times that I can almost predict what will happen next before the story even ends. In the episode, everyone's bananas are stolen, and in the end, they discover that all the bananas were hidden by 乃奈. Because I like animals very much, 嘎魯 and 乃奈 are my favorite characters. In this episode, 乃奈 not only appears many times, but there are also many funny moments which always make me laugh out loud. I not only watch GO GO GIWAS on TV, but because I like it so much, my mom also gave me a GIWAS notebook. She told me that the notebook was given to her by a professor at her school. I was very surprised to learn that my mom's professor was actually one of the people who created GO GO GIWAS. I really admired them and thought it was amazing that someone from my mom's school could make such a great animation. Through this animation, I have learned a lot about Indigenous science and knowledge. For example, I learned how people build cellars using straw and bamboo. I also learned that when making bark cloth (tapa), people need to cut down a tapa cloth tree (also called the dang-dang tree in Mandarin because its fruit looks like bells). Before cutting down the tree, they must explain their purpose to it and place a stone beside the tree to wish it well. These details helped me understand Indigenous culture more deeply and made the animation even more meaningful to me. After watching GO GO GIWAS, the thing I want to do most is to build an underground storage cellar for sweet potatoes, because then I can have lots of sweet potatoes to eat without worrying about them going bad. If I succeed, it would definitely make me feel really proud!

報告主題	一起蓋穀倉學科學：分享讓世界更靠近	
Report Topic	Building a Barn Together: Sharing Science and Cultures	
發表者學校	新竹市立建功國民小學	
發表者	洪毓琪	Windy Hung
指導者	劉靜妮	Ching-Ni Liu
摘要	"在《吉娃斯愛科學》第二季第一集中，我看到一個很特別的故事。來自荷蘭的男孩里昂到飛鼠部落過暑假，巴彥和斗腊帶他到古戰場時，發現原本的獵寮被山豬破壞了。於是，大家決定一起合作，蓋一座新的穀倉。 我覺得最棒的地方是，大家一起分工合作，有人搬木頭、有人幫忙整理材料。里昂也和吉娃斯、飛卉一起幫忙，還跟大家分享荷蘭的文化，讓我知道原來世界上有很多不同的生活方式。雖然大家來自不同地方，但只要願意分享，就可以一起完成一件很大的事情。 穀倉蓋好後，斗腊拿出木柴開始煙燻房屋，大家一開始以為房子要被燒掉了，都很緊張。後來巴彥解釋，原來用煙燻木柴可以讓木頭不容易壞掉，還能防止蟲子，這是一種生活中的科學知識。我這才知道，科學不只是在教室裡，也藏在部落的智慧裡。 這一集讓我學到，科學可以幫助我們解決問題，也可以讓我們更懂得分享。當大家一起學、一起做、一起分享知識時，世界就會變得更溫暖。我希望自己也能像吉娃斯一樣，勇敢學習、樂於分享，和朋友一起創造更多美好的事情。"	

English Abstract	"In Go Go Giwas Season 2, Episode 1, I watched a special story about sharing and learning together. A Dutch boy named Leon comes to the Flying Squirrel village for the summer. When Bayan and Dula take him to the old battlefield, they find that the hunting hut was destroyed by wild boars. Everyone decides to work together to build a new barn. I liked how everyone helped each other. Leon works with Giwas and Feihui and also shares stories about Dutch culture. Even though they come from different places, they learn that sharing brings people closer. After the barn is finished, Dula uses wood smoke on the building. At first, everyone is scared because they think the barn will burn. Bayan then explains that smoking the wood helps protect it and keeps it strong. I learned that this is science from daily life. This episode taught me that science helps us share knowledge and solve problems. When we learn and share together, the world becomes a kinder place."

報告主題	河流竟然會移動？！我和吉娃斯的科學發現	
Report Topic	The River Moved?! My Science Discovery with Giwas	
發表者學校	台北市立百齡國民小學	
發表者	陳奕鳴	CHEN,YI-MING
指導者	蔡瑩圜	TSAI,YING-YUAN
摘要	本摘要為我觀賞《吉娃斯科學小教室》第 4 集「河水改道」後的學習心得。影片中，吉娃斯和朋友們在村莊附近遇到一場暴風雨。隔天醒來，他們發現河川突然改道，昨天放置的魚筌也不見了。這個突發事件成為了解自然河道變化的起點。 動畫解釋河流是一個不斷改變的動態系統。水流、土壤種類、降雨量與地形，都會影響河流的走向。快速強勁的水流會侵蝕河岸，把土壤與石頭帶走，沉積在下游的其他位置，使河道改變方向。這個過程可能緩慢，也可能像影片中一樣因暴雨突然發生。動畫以清楚圖像呈現侵蝕、搬運及水流力量等科學概念。 影片也提醒我們，河川改道會影響人們的生活，例如：破壞農田、淹水、沖走工具等，因此理解河川非常重要。此外，影片連結到原住民族的自然智慧，他們長期觀察自然、尊重土地並懂得與環境共存，這些知識值得我們學習。 這一集啟發我思考如何運用科學與創意來因應自然變化，例如：設計簡單工具偵測河流變動。透過結合科學理解與傳統智慧，我們能更安全、更尊重自然地生活。	

English Abstract	This abstract reflects my learning from the Giwas Science Classroom Episode 4, “River Course Change.” In this episode, Giwas and her friends experience a heavy storm near their village. After the storm, they discover that the river beside their community has changed its direction, and the fishing trap they placed the previous day has disappeared. This unexpected event becomes the starting point for learning about the natural phenomenon of river course change. The animation explains that rivers are dynamic systems shaped by natural forces. Water flow, soil type, rainfall, and terrain all affect how rivers move. When the water becomes fast and strong, it erodes soil and rocks from the riverbank. These materials are carried away as sediments, which later accumulate in other areas. As a result, the river may carve a new path. This process can happen gradually or suddenly, especially after storms or typhoons. The episode uses clear visuals to help children understand erosion, sediment transport, and the power of moving water. Through the story, I learned that rivers are always changing, and these changes can affect human life. If a river changes its course, it might damage farmland, break fishing tools, or even cause flooding. Understanding river systems is important for safety and for planning where people should build homes or grow crops. The episode also connects to Indigenous ecological knowledge. Indigenous communities have long observed natural signs and adapted their lives to the environment, developing deep respect for rivers and mountains. Their wisdom teaches us the importance of paying attention to nature and living in harmony with it. This animation inspired me to think about how science and creativity can help us respond to natural changes. For example, simple tools or markers could help villagers detect when a river begins to shift. By combining scientific understanding and traditional knowledge, we can protect people and learn to appreciate natural forces. The episode encouraged me to observe my environment more carefully and to respect the power and beauty of nature.

報告主題	分享的暗號	
Report Topic	Signals of Sharing	
發表者學校	臺南市立子龍國民小學	
發表者	趙振廷	JAU,JEN-TING
指導者	趙森軒	JAU,SHEN-SHIUAN
摘要	今天要帶大家走進《吉娃斯愛科學》世界—「分享的訊號」。 我 76 歲的爺爺種了很多香蕉。每到採收季，香蕉總會一口氣集體成熟變黑，彷彿聽到暗號似的，爺爺必須趕快把香蕉分送給親友，這讓我好奇：為什麼熟得這麼快又會變黑呢？ 原來，香蕉會釋放「乙烯」氣體，這是種「成熟訊號」，會讓周圍的果實互相提醒，加速整串果實一起變黃。至於變黑，祕密藏在細胞裡：香蕉皮內的多酚與酶，原本被細胞膜隔開。當細胞膜破損時，多酚和酶便會相遇。「酶」就像打開反應大門鑰匙，一旦轉動，多酚與空氣中的氧氣反應，產生氧化作用，香蕉皮上就出現黑斑。 每次採收，爺爺總穿著沾滿褐色汁液的「香蕉衣」。爺爺說，這衣服上沾滿了農民的努力與故事。爺爺還講了「旗山香蕉大王」的傳奇：農民穿髒衣服去銀行辦事，卻被行員看不起。沒想到他一怒之下要求領出全部存款，行員才驚覺銀行裡一半的錢都是他的！ 原來，衣服上最不起眼的污漬，正是勤勞與財富的象徵。爺爺說，他穿上那件衣服，就感覺自己也跟香蕉大王一樣厲害。爺爺長年吃香蕉，皮膚亮到發光，這都是天然多酚的保養效果。我想，我也要多吃香蕉，不只為健康，也支持臺灣農民的辛勞。 吃香蕉變健康，支持農業變可愛，讓我們一起用行動為臺灣加油!	

English Abstract	I'm going to invite you to walk with me into the world of Go Go Giwas. The topic I want to share is very interesting—"Signals of Sharing." My grandpa is seventy-six years old. He grows tons of bananas. And every harvest season, something magical—and honestly, kind of funny—always happens. All the bananas seem to ripen in one breath. It's like they hear a secret password and suddenly decide, "Alright, everyone turns yellow… Now!" So Grandpa has to rush around, giving bananas to neighbors, relatives, and friends. And that's how I started getting super curious: Why do bananas ripen so fast? And why do they turn black so quickly afterward? I found out that bananas release a gas called ethylene. Think of ethylene as a "ripening signal", like fruit group chat notifications. One banana sends the message, and the others are like, "Got it!" Then the whole bunch turns yellow together. The mystery of the black spots, though, is hidden deep inside each cell of the peel. Banana skin has polyphenols and enzymes, normally kept apart by the cell membrane. But when the banana gets bumped, or sits too long, or simply gets old, the membrane breaks. Suddenly, the polyphenols and enzymes meet. At that moment, the enzyme acts like a key, opening the door to a quick chemical reaction. The polyphenols rush to react with oxygen in the air, and boom—dark spots bloom across the peel like tiny constellations. Whenever I go banana-picking with my grandpa, my favorite thing is watching him put on his legendary "banana shirt", a shirt stained all over with brown banana juice. He laughs and says every banana farmer has a shirt like that, soaked with efforts and stories. Then he told me the tale of the Banana King of Qishan. One day, this Banana King walked into a bank wearing a dirty banana-stained shirt. The bank staff looked down on him. He is annoyed, so he demanded to withdraw all his savings. Only then did the staff realize that half of the bank's money belonged to him. Who would have guessed those ugly little stains which were symbols of hard work and of quiet fortune? Grandpa says that when he puts on his own banana shirt, he feels just as awesome as the Banana King. Grandpa has eaten his own bananas for years, and his skin practically glows. He jokes that it's the power of "natural polyphenol skincare." Honestly, I'm starting to believe him. So, I will eat more bananas too. Not just to stay healthy or have better skin, but to support the farmers who work so hard in Taiwan. Eating bananas makes us stronger. Supporting farmers makes us kinder. So let's take action together and cheer for Taiwan!

報告主題	智慧之橋—我對「彩虹橋約定」的心得	
Report Topic	A Bridge of Wisdom: My Thoughts on "The Promise of the Rainbow Bridge"	
發表者學校	新竹市立關東國民小學	
發表者	葉皇廷	YEH,HUANG-TING
指導者	葉昌國	YEH,CHANG-KUO
摘要	最近，我看了一部很棒的影片，叫做「彩虹橋的約定」。我非常喜歡這部影片，因為它不只是一個故事，它結合了泰雅文化、科學和大自然。它讓我學到了原住民的智慧是如何把生活中的一切連結在一起。 在泰雅文化中，彩虹橋非常重要。人們相信它連接著他們與祖靈。然而，這有一個規則：只有那些努力工作且全心投入的人才能走過這座橋。這個信仰教了我珍貴的一課。這意味著成功沒有捷徑。如果我想要達成目標，我就必須像泰雅祖先一樣努力。 我很驚訝這部影片也教了我科學。它用簡單的方式解釋了像「支點」和「壓力」這些困難的概念。我學到了蓋橋需要平衡。更重要的是，影片展示了如何尊重自然。例如，如果我們把橋的支撐點蓋在河的正中間，可能會破壞螃蟹的家。泰雅智慧教導我們要使用當地的材料，並建造對人類和動物都安全的橋梁。 除了知識之外，這部影片看得很開心！開場歌曲的節奏很棒，幽默的片段也讓我不覺得無聊。我也很享受聽到原住民的語言。 用英文寫這篇報告對我來說是個挑戰，因為有一些很難的單字。但是，記住彩虹橋的教訓，我決定不放棄。我很努力地完成了這份報告，也學到了很多新單字。 總結來說，「彩虹橋的約定」是一部很棒的影片。它讓我看到文化、科學和環境保護是如何連結在一起的。我希望未來能學習更多關於這些主題的知識。	

English Abstract	Recently, I watched a fantastic video called "The Promise of the Rainbow Bridge." I really liked this video because it is not just about a story; it combines Atayal culture, science, and nature. It taught me how Indigenous wisdom connects everything in our lives. In Atayal culture, the Rainbow Bridge is very important. People believe it connects them to their ancestral spirits. However, there is a rule: only those who work hard and are dedicated can cross this bridge. This belief taught me a valuable lesson. It means that there are no shortcuts to success. If I want to achieve my goals, I must work hard, just like the Atayal ancestors. I was surprised that the video also taught me about science. It explained difficult concepts like "fulcrum" and "pressure" in a simple way. I learned that building a bridge requires balance. More importantly, the video showed us how to respect nature. For example, if we build a bridge support right in the middle of the river, it might hurt the crabs' home. The Atayal wisdom teaches us to use local materials and build bridges that are safe for both people and animals. Besides the knowledge, the video was very fun to watch! The opening song had a great rhythm, and the funny moments kept me interested. I also enjoyed hearing the Indigenous language. Writing this report in English was a challenge for me because there were some hard words. However, remembering the lesson of the Rainbow Bridge, I decided not to give up. I worked hard to finish this report, and I learned a lot of new vocabulary. In conclusion, "The Promise of the Rainbow Bridge" is an amazing video. It showed me that culture, science, and environmental protection are all connected. I hope to learn more about these topics in the future.

報告主題	水果為什麼會變色？讓我們分享更多美味與快樂	
Report Topic	Why Do Fruits Change Color? Let's explore and share!	
發表者學校	新竹市立建功國民小學	
發表者	黎芷芸	Jenna Lai
指導者	黃芸茵	Yun-yin Huang
摘要	在吉娃斯愛科學－分享的暗號中，吉娃斯和同伴們發現了一個有趣的祕密：原來科學也可以用來分享！故事從大家一起準備食物開始，他們注意到水果切開後會慢慢變色。為什麼香蕉、蘋果或馬鈴薯會變成褐色呢？帶著這個疑問，吉娃斯展開了一場小小的科學探險。 原來水果裡有一種天然成分叫做多酚。當水果被切開、碰到空氣後，多酚會和空氣中的氧氣產生反應，所以顏色才會改變。原來這就是水果變色的暗號！透過觀察這些小變化，吉娃斯和朋友們學會了用科學的方法找答案，也懂得原來每天看到的事情背後都有科學的智慧。 最令我印象深刻的是這一集中強調分享的重要。吉娃斯發現，如果我們懂得科學，就能把食物保存得更好，讓更多人一起享受美味；或是利用科學知識解決小問題，讓分享變得更快樂、更貼心。科學不只是課本上的知識，它還能讓我們與朋友、家人建立更溫暖的連結。 我希望透過這次報告分享自己從影片中學到的生活科學，也想告訴大家：原來科學就在身邊，它能讓世界變得更好、讓分享變得更有意義。只要帶著好奇心觀察生活，我們每個人都能成為小小的科學家！	

English Abstract	In Go Go Giwas Season 2, Episode 8 “The Sharing Code,” Giwas and her friends discover a fun secret: science can help us share better! When they prepare fruit together, they notice that apples and bananas turn brown after being cut. Curious about this change, they begin a simple science adventure. The episode explains that fruits contain polyphenols, natural substances that react with oxygen in the air. This is why the color changes. Giwas learns that these small changes are actually “science signals” from everyday life. By observing carefully, she and her friends find the answers using science thinking. Most importantly, the story shows that sharing becomes more meaningful when we understand science. We can keep food fresh, solve small problems, and make others happy. Science helps us care for each other and share beautiful things in life. I want to share what we learned: science is all around us. With curiosity, anyone can become a young scientist who spreads kindness through sharing.

報告主題	槓桿原理	
Report Topic	The principle of leverage	
發表者學校	新北市立明德高級中學附設國中部	
發表者	連翊孝	Eason
指導者	林步剛	LIN, PU-KANG
摘要	《吉娃斯愛科學：獵人的智慧》這一集動畫，以生動有趣的方式將原住民的傳統文化與現代科學知識結合，讓我印象深刻。故事從乃奈發現一隻被獸鋏夾傷的小猴子開始，帶出了非法捕獵工具對野生動物的傷害，進而引導觀眾思考人與自然的關係。 故事中，飛卉因為好奇使用了獸鋏，導致小猴子受傷。巴彥伯伯沒有責罵他，反而藉此機會教導飛卉和來自荷蘭的里昂如何製作傳統的泰雅族陷阱。這個情節設計非常巧妙，展現了部落長輩的智慧與包容。傳統陷阱的設計並非為了趕盡殺絕，而是充滿了對生態的尊重與智慧。 巴彥伯伯在教導製作陷阱時，明確地解釋了其中的科學原理——槓桿原理。他詳細說明了如何利用樹枝、石塊等自然材料，透過施力點、支點和抗力點的設計，製作出能捕捉獵物又不會造成過度傷害的裝置。雖然吉娃斯因為泰雅族女性的身份不能公開學習，但她躲在旁邊偷聽的情節，也反映了傳統文化在現代社會的轉變與調適，以及她渴望學習新知的決心。 我最大的心得體會是，原住民的傳統智慧並非迷信或落後，而是經過世世代代與大自然和諧共存所累積出來的「生活科學」。這些智慧蘊含著深刻的生態學、物理學知識，例如如何利用自然材料、了解動物習性，以及最重要的——永續利用的精神。 相較於現代冰冷的獸鋏，傳統陷阱更注重生態平衡，只獵捕需要的食物，避免濫捕。這讓我反思，在追求現代科技發展的同時，我們是否遺忘了與自然和諧共存的古老智慧？我們應該學習像巴彥伯伯那樣，將科學知識應用於尊重生命、保護環境的方式上。 總結來說，這一集《獵人的智慧》不僅是一堂有趣的物理課，更是一堂寶貴的生命教育與環境倫理課。它提醒我們，真正的智慧是懂得如何與萬物共生共榮。	

English Abstract	I was impressed by the animation of "Givas Loves Science: The Wisdom of Hunters", which combines the traditional culture of the aborigines with modern scientific knowledge in a vivid and interesting way. The story begins with Naina finding a little monkey pinched by a beast, bringing out the harm of illegal hunting tools to wild animals, and then guiding the audience to think about the relationship between man and nature. In the story, Feihui used the beast erbium out of curiosity, causing the little monkey to be injured. Instead of scolding him, Uncle Bayan took this opportunity to teach Feihui and Lyon from the Netherlands how to make traditional Taiya traps. The plot design is very clever, showing the wisdom and tolerance of the tribal elders. The design of the traditional trap is not to kill, but is full of respect and wisdom for ecology. When Uncle Bayan taught how to make traps, he clearly explained the scientific principle - the lever principle. He explained in detail how to use branches, stones and other natural materials to make devices that can capture prey without causing excessive damage through the design of force points, fulcrums and resistance points. Although Givas could not study openly because of the identity of Taiya women, the plot she hid and eavesdropped on also reflected the transformation and adjustment of traditional culture in modern society, as well as her determination to learn new knowledge. My biggest insight is that the traditional wisdom of the aborigines is not superstition or backwardness, but the "science of life" accumulated through the harmonious coexistence with nature for generations. These wisdoms contain profound knowledge of ecology and physics, such as how to use natural materials, understanding animal habits, and most importantly, the spirit of sustainable use. Compared with modern cold beasts, traditional traps pay more attention to ecological balance, only hunt the necessary food, and avoid overhunting. This makes me reflect that while pursuing the development of modern science and technology, have we forgotten the ancient wisdom of harmonious coexistence with nature? We should learn to apply scientific knowledge to respect life and protect the environment like Uncle Bayan. To sum up, this episode "Hunter's Wisdom" is not only an interesting physics lesson, but also a valuable life education and environmental ethics lesson. It reminds us that true wisdom is to know how to live and prosper with all things.

報告主題	科技和傳統的融合	
Report Topic	The integration of technology and tradition	
發表者學校	新北市立明德高級中學附設國中部	
發表者	陳湘盈	Sandy
指導者	林步剛	Lin Bugang
摘要	槓桿原理是物理學中的基礎概念，但在課本之外，我們很少有機會看到它在日常生活，尤其是在原住民傳統山林智慧中的具體實踐。 巴彥的教學展示了原住民祖先如何憑藉對自然法則的深刻理解，創造出符合生活需求的工具與方法。 這讓我意識到，科學並非遙不可及的理論，而是存在於我們周遭，解決問題、改善生活的實用智慧。 其次是對生態保育的啟發。 故事始於對小動物的傷害，而解決之道並非放棄狩獵，而是改用更人道、更具智慧的傳統方式。這反映了泰雅文化中對待自然的尊重與永續利用精神。 現代科技有時會帶來便利，卻也可能造成生態浩劫；反觀傳統智慧，往往能兼顧人類生存與環境和諧。 總而言之，《吉娃斯愛科學：獵人的智慧》不僅是一堂生動的自然課程動畫，更是一次關於責任、智慧與尊重生命的教育。 它啟發我們思考如何在現代科技發展與傳統文化價值之間找到平衡，用智慧守護我們共有的地球家園。	

English Abstract	The principle of leverage is a basic concept in physics, but outside of textbooks, we rarely have the opportunity to see it in daily life, especially in the concrete practice of indigenous traditional mountain and forest wisdom. Bayan's teaching shows how the ancestors of the aboriginals created tools and methods that meet the needs of life with a deep understanding of the laws of nature. This made me realize that science is not an unattainable theory, but a practical wisdom that exists around us to solve problems and improve life. The second is the inspiration for ecological conservation. The story begins with the harm of small animals, and the solution is not to give up hunting, but to change to a more humane and wiser traditional way. This reflects the respect for nature and the spirit of permanent use in Taiya culture. Modern technology sometimes brings convenience, but it may also cause ecological catastrophe; on the contrary, traditional wisdom can often take into account the harmony of human survival and the environment. In a word, "Givas Love Science: The Wisdom of Hunters" is not only a vivid natural course animation, but also an education on responsibility, wisdom and respect for life. It inspires us to think about how to find a balance between the development of modern science and technology and the value of traditional culture, and to protect our common earth home with wisdom.

報告主題	蓮葉效應	
Report Topic	The Lotus Effect	
發表者學校	臺南市立佳里國民中學	
發表者	趙千嫻	JAU,CHIAN-SHIAN
指導者	曾絮敏(佳里國小老師)	TSENG,HSU-MIN
摘要	爺爺今年快 80 歲了，身體依然硬朗。他每天把種芋頭當作運動。小時候跟著爺爺上山，他教我分辨「芋頭」和不能吃的「姑婆芋」的小秘訣： 如果把水潑在葉子上，水馬上散開的，是姑婆芋；而能凝成一顆顆晶亮水珠、在葉子上滾來滾去的，就是可以吃的芋頭。芋頭葉和蓮花一樣，都具有神奇的「蓮葉效應」。 蓮花表面有肉眼看不到、奈米級的小纖毛，這些纖毛是直徑約 20～50 奈米的針狀蠟質凸起。因為蠟與水天生互斥，當水滴落在蓮葉上時，就會被推擠成圓圓的水珠。而芋頭葉的纖毛也有類似結構，使葉子的接觸面積變大、排水效果最大化，所以水珠就能在上面自由滾動。 當水珠滾動時，灰塵一起帶走，使葉子乾淨，這就是「蓮葉效應」的原因。 除了看葉子，爺爺還特別提醒我：削芋頭一定要戴手套！ 在削芋頭時，我一不小心碰到芋頭皮，手癢到不行。讓我想到，有次爬山忘了帶雨具，全家突發奇想，摘下路邊心型姑婆芋葉子當雨傘。一開始超浪漫，但一下山整個浪漫瞬間消失，姑婆芋汁液碰到的地方癢到抓狂。 後來查資料才知道，芋頭和姑婆芋的汁液中都含有「草酸鈣」和「皂素」，會使皮膚刺痛與搔癢。 透過這次分享，我不僅再次感受到爺爺的生活智慧，也用科學解開平常都沒想過的秘密——真是讓我大開眼界。	

English Abstract	I'd like to share with you a fascinating idea from Go Go Giwas, "the Lotus Effect." My grandpa is nearly eighty years old. But he is still strong and energetic. Every day, he insists on growing taro as a workout. When I was little and went hiking with him, he taught me a simple way to tell edible taro from the inedible alocasia odora. Just splash some water on the leaf. If the water spreads out, it's the poisonous one; if the droplets bead up like tiny crystals, it's delicious taro. That little magic is what we call "the Lotus Effect." The surface of a taro leaf is covered with nano-sized hairs and tiny bumps—"nano" being a super small unit of length, not a kind of rice! These invisible structures, together with a natural waxy coating, create a strong repelling force that pushes water upward. That's why droplets stay round and roll freely across the leaf, picking up dust along the way. The leaf practically cleans itself. A nanometer is a very small unit of length. The surface of cilia consists of needle-like waxy protrusions with a diameter of approximately 20-50 nanometers. The wax and water repel each other, causing water to form droplets that roll around on the leaf. Furthermore, the cilia on taro leaves have a maximizing effect. If the leaf were originally flat, the addition of nano-sized cilia increases the contact area, maximizing the water repulsion. As the water droplets roll due to this repulsion, dust on the leaf surface is carried away, leaving the leaf clean. This phenomenon, observed in lotus flowers, is called the "lotus leaf effect." Besides telling from different leaves, my grandfather also warned me that always put on gloves when peeling taros. Of course, I ignored him once. I touched the skin with my bare hands, and the intense itching almost drove me crazy. It reminded me of when I was little and used the alocasia odora leaves of as an umbrella. Once, when we went mountain climbing, we didn't bring umbrellas or raincoats. On a whim, we picked some wild taro leaves from the roadside to use as an umbrella. Walking in the rain with these heart-shaped leaves was incredibly romantic. It felt poetic at the time, but after the rain, every part of my skin that touched the leaf started itching like wild. Turns out, romance comes with a price. After doing some research, I finally learned that both edible taro and the poisonous variety contain calcium oxalate and saponins. These chemicals irritate the skin and can cause stinging and itching. Through this experience, I gained not only my grandpa's wisdom, but also a deeper scientific understanding of why water beads dance on taro leaves and why our skin reacts the way it does. It's been truly eye-opening!

報告主題	不同位置，一樣重要：我眼中的拼板舟精神	
Report Topic	Different Positions, Same Importance: The Spirit of the Plank Boat Through My Eyes	
發表者學校	嘉義縣立義竹國民中學	
發表者	郭柏辰	Guo Bo-Chen
指導者	郭紹偉	Kuo,Shao-Wei
摘要	在我看完《吉娃斯愛科學》第四季第一集〈大船落成〉之後，覺得這一集真的很特別，不只是介紹科學知識，還把原住民文化和科學結合在一起，讓我印象很深刻。影片中提到人在太空站時，因為幾乎沒有重力，血液不會像在地球一樣往下流，而是會往頭部集中，所以太空人的臉看起來會比較腫、比較大。這讓我第一次真正理解「重力」對人體的影響，也覺得在外太空生活其實沒有想像中那麼輕鬆。 另外，影片還介紹了太空站的建造方式，因為太空站非常巨大，不可能一次完成，所以必須先在地球做好各個部分，再運送到太空中組合起來。這個概念讓我聯想到影片裡介紹的達悟族拼板舟。達悟族人在造船時，會依照不同部位的功能選擇不同的木材，例如船底最重要的龍骨要用又硬又耐磨的台東龍眼樹，而船身兩側比較高的地方，則會使用較輕、能提供浮力的麵包樹。這讓我發現，原住民早在很久以前就已經懂得運用材料特性，這其實就是一種生活中的科學智慧。 想到下禮拜學校要舉辦校慶運動會，我覺得我們班就像一艘拼板舟，需要每個人各司其職、互相合作。我認為班上體力最強、最穩定的同學就像龍骨，是支撐全班的重要角色；而比較瘦小、跑步快的同學就像麵包樹，在大隊接力中能發揮關鍵作用。至於我自己，則介於中間，雖然沒有特別突出，但我也希望能盡自己的一份力，讓班級更完整。 影片中還提到喜馬沙克克服對黑暗的恐懼，勇敢出海，這讓我想到自己以前很害怕蜂炮廟會的經驗。雖然一開始很恐懼，但因為常常遇到，慢慢地也學會適應、不再那麼害怕。整體來說，我覺得《吉娃斯愛科學》不但有趣，也讓我學到科學、文化和勇氣的重要性，是一部很值得推薦的影片。	

English Abstract	After watching Go Go Giwas, Season 4, Episode 1, “The Big Boat Is Completed,” I felt that this episode was very special. It not only introduced science knowledge, but also combined science with Indigenous culture, which left a deep impression on me. In the video, it mentioned that when people stay on a space station, there is almost no gravity. Because of this, blood does not flow downward like it does on Earth. Instead, it moves toward the head, so astronauts’ faces look bigger and more swollen. This helped me understand for the first time how gravity affects the human body, and it also made me realize that living in space is not as easy as I imagined. The video also talked about how the space station is built. Because the space station is very large, it cannot be finished all at once. The different parts must first be made on Earth and then sent into space to be put together. This idea reminded me of the Tao people’s plank boat shown in the video. When the Tao people build a boat, they choose different kinds of wood for different parts. For example, the keel at the bottom of the boat is the most important part, so they use very hard and strong longan wood from Taitung. For the higher sides of the boat, they use lighter breadfruit wood to provide buoyancy. This made me realize that Indigenous people understood how to use the properties of materials a long time ago. This is actually a kind of science wisdom in daily life. Thinking about the school anniversary sports day next week, I feel that our class is like a plank boat. Everyone has a role, and we must work together. I think the classmates who are the strongest and most stable are like the keel, supporting the whole class. The smaller and faster runners are like breadfruit wood, playing an important role in the relay race. As for me, I am somewhere in between. I am not very outstanding, but I still hope to do my part and help make our class more complete. The video also mentioned that Himashak overcame his fear of the dark and bravely went out to sea. This reminded me of my own experience of being afraid of firecracker temple festivals. At first, I was very scared, but because I faced it many times, I slowly learned to get used to it and was no longer so afraid. Overall, I think Go Go Giwas is not only interesting, but also teaches me the importance of science, culture, and courage. It is a video that I would strongly recommend.

報告主題	從小小螢火蟲學到的大勇氣	
Report Topic	Great Courage Learned from a Little Firefly	
發表者學校	嘉義縣立義竹國民中學	
發表者	馬玟君	Ma Wen-Jun
指導者	翁桂櫻	Keui-Ying Weng
摘要	在看完《吉娃斯愛科學》的〈誰的眼淚在發光〉這部影片後，我不只被故事深深感動，也學到了一個新的科學知識。影片中提到，螢火蟲所發出的光是一種「冷光」，幾乎不會產生熱能。雖然這段說明不長，卻讓我對螢火蟲有了全新的認識，也讓這部影片不只是感人，更具有教育意義，讓觀眾在欣賞故事的同時，也能學到科學新知。 影片中有一個情節讓我印象特別深刻。小女孩想要前往部落看海，但因為家人擔心她的安全，一開始並不願意讓她去。這段情節讓我聯想到自己國小升上國中的一段經歷。當時我原本是管樂社的一員，升上國中後，許多同學選擇繼續留在管樂社，因為這樣不但對團隊比較有幫助，也不用重新學習新的樂器。然而，我卻想嘗試不同的音樂風格，因此選擇加入國樂社。 那時候，同學們不斷勸我留下來，認為繼續待在管樂社比較穩定，也比較跟得上進度。但我還是堅持自己的想法，即使在國樂社裡沒有認識的人，我也願意勇敢嘗試，因為我不想錯過學習不同事物的機會。 透過這部影片，我了解到成長的過程中，常常需要為自己的選擇負責。只要勇敢嘗試、相信自己，就有機會看到不一樣的風景。這也是《吉娃斯愛科學》帶給我最重要、也最深刻的省思。	

English Abstract	After watching Go Go Giwas episode “Whose Tears Are Shining,” I was not only deeply moved by the story, but I also learned a new scientific fact. The video said that the light from fireflies is called “cold light,” which produces almost no heat. Although this explanation was short, it gave me a new understanding of fireflies. It made the video not only touching but also educational, letting viewers learn science while enjoying the story. One part of the video left a very deep impression on me. The little girl wanted to go to the village to see the sea, but her family did not want her to go at first because they were worried about her safety. This part reminded me of my own experience when I went from elementary school to junior high. I was originally in the wind band. After entering junior high, many classmates chose to stay in the wind band because it helped the team and they did not have to learn a new instrument. However, I wanted to try a different style of music, so I chose to join the traditional Chinese music club. At that time, my classmates kept trying to persuade me to stay in the wind band. They thought it was more stable and easier to follow the progress. But I still insisted on my decision. Even though I did not know anyone in the Chinese music club, I was willing to try bravely because I did not want to miss the chance to learn something new. Through this video, I realized that growing up often means taking responsibility for your choices. If you are brave enough to try and believe in yourself, you can see new and different experiences. This is the most important and deepest lesson I learned from Go Go Giwas.

報告主題	拼板舟教我的事：科學、文化與合作	
Report Topic	What the Plank-Built Boat Taught Me: Science, Culture, and Cooperation	
發表者學校	嘉義縣立義竹國民中學	
發表者	丁承睿	Ding Cheng-Rui
指導者	翁桂櫻	Keui-Ying Weng
摘要	我是義竹國中一年二班的學生，從國小開始，我就對科學充滿好奇。老師常鼓勵我參加科學展覽和科技競賽，前陣子我也和同學一起組隊比賽，雖然沒有得獎，心裡有點失落，但老師和媽媽告訴我，現在才國中一年級，重要的是學習過程，只要繼續努力，未來一定還有機會。這些話讓我重新找回對科學探索的信心。 最近在課堂上觀看《吉娃斯愛科學》的〈大船落成時〉，更讓我對科學產生全新的想法。影片中提到，太空站因為太大，必須先在地球製作零件，再送到太空組裝，這個概念竟然和達悟族製作拼板舟的方法很像，讓我覺得非常驚奇。原來看起來很先進的太空科技，早就在原住民的生活智慧中出現過。 影片中介紹，達悟族會依照船的不同部位選用不同木材，像是用堅硬的台東龍眼樹當龍骨，用較輕的麵包樹做船身，這讓我發現，原住民其實早就懂得材料科學，只是用生活經驗累積而成。我開始好奇，他們是經過多少次嘗試，才找到最適合的做法？ 這個禮拜五是我們校慶運動會，我覺得我們一二班就像一艘拼板舟，每個人都有不同的角色。就算我不是最強壯的那塊木板，我也希望成為能讓大家團結的那一部分。就像學科學一樣，就算失敗過，只要不放棄、持續探索，終究會找到屬於自己的位置。	

English Abstract	I am a student from Class 1-2 at Yizhu Junior High School. I have been curious about science since elementary school. My teachers often encouraged me to join science fairs and technology contests. Some time ago, I joined a competition with my classmates. We did not win, so I felt a little sad. However, my teacher and my mom told me that I am only in the first year of junior high school. They said the learning process is more important, and if I keep trying, I will have more chances in the future. Their words helped me regain my confidence in learning science. Recently, we watched a video called Go Go Giwas: When the Big Boat Is Finished in class. It gave me a new way to think about science. The video said that a space station is too big to be built at one time, so people make the parts on Earth first and then put them together in space. I was very surprised because this idea is similar to how the Tao people build a plank boat. I learned that modern space technology is very much like the wisdom of Indigenous people. The video also talked about how the Tao people choose different kinds of wood for different parts of the boat. They use strong and hard wood for the bottom of the boat, and lighter wood for the sides to help it float. This made me realize that Indigenous people understood material science through their life experience. I began to wonder how many times they tried before finding the best way. This Friday is our school sports day. I think our class is like a plank boat. Everyone has a different role. Even if I am not the strongest one, I still want to be a part that helps our class work together. Just like learning science, even if I fail sometimes, as long as I do not give up and keep exploring, I will find my place one day.

報告主題	小光點，大啟示：科學與親情的交會	
Report Topic	A Little Light, a Big Lesson: Where Science Meets Family	
發表者學校	嘉義縣立義竹國民中學	
發表者	吳真緹	Wu Zhen-ti
指導者	翁桂櫻	Keui-Ying Weng
摘要	那天，吉娃斯心裡像塞了一顆小小的石頭，因為爸爸不讓她遠行，她悄悄走進森林，把自己放在軟軟的草地上睡著了。夜色中，樹葉像輕輕搖晃的手，而微小的光點在黑暗裡閃爍——巴彥帶著穆尼和飛輝，輕手輕腳地去看螢火蟲。吉娃斯躲在樹後，偷聽穆尼講螢火蟲的故事。她才知道，螢火蟲的光，不只是漂亮，它是求偶的訊號，也是對危險的警告。那一刻，她的心像被溫柔的小光點照亮，悶悶的難過也慢慢散開。 科學知識在這裡像魔法：螢光素、氧氣、ATP 和螢光素酶一起跳舞，讓黑夜亮了起來。更重要的是，螢火蟲只能生活在乾淨、沒有光害的地方，它們提醒我們要珍惜環境、節約能源，保護地球上的每一個小生命。 但讓我印象最深的，是吉娃斯和爸爸的心裡故事。爸爸嚴厲，是因為擔心；吉娃斯渴望，是因為勇氣和好奇。最後，爸爸懂了女兒的心，答應她在有大人陪同下去旅行。這讓我想到自己：今年我也想第一次和朋友外出，媽媽一開始不同意，怕我坐錯公車，也怕朋友群不安全。我不懂她的擔心，整個下午都在懇求，最後她才答應。那一刻，我明白了，家人的愛，有時像螢火蟲的光，看起來嚴肅，其實是照亮我們前行的溫暖。 這一集，不只教我科學知識，更像童話裡的魔法，把親情、勇氣、理解和尊重都串在一起。夜裡的螢火蟲，不只是亮光，也是心靈的小燈，提醒我：即使在黑暗中，也總有溫暖的光，陪著我們走向希望。	

English Abstract	That day, Givas felt like she had a small stone in her heart because her father didn't let her go far. She quietly walked into the forest and lay down on the soft grass to sleep. In the night, the leaves moved gently like waving hands, and tiny lights twinkled in the dark—Bayan was quietly walking with Muni and Feihui to see the fireflies. Givas hid behind a tree and listened to Muni telling the story of the fireflies. She learned that firefly light is not only pretty; it is a signal for mating and also a warning for danger. At that moment, her heart felt softly lit by the little lights, and her sadness slowly faded away. The scientific knowledge here felt like magic: luciferin, oxygen, ATP, and luciferase danced together to make the night bright. Even more important, fireflies can only live in clean places without light pollution. They remind us to protect the environment, save energy, and care for every little life on Earth. What impressed me the most was the story between Givas and her father. Her father was strict because he was worried, and Givas wanted freedom because she was brave and curious. In the end, her father understood her heart and agreed to let her travel if an adult went with her. This made me think of myself: this year, I wanted to go out with friends for the first time. At first, my mother didn't agree because she was afraid I might take the wrong bus and worried about my friends. I didn't understand her worry and begged her the whole afternoon. Finally, she agreed. At that moment, I realized that family love is sometimes like firefly light—it may seem strict, but it is warm and guides us forward. This episode taught me more than just science. It felt like magic from a fairy tale, connecting love, courage, understanding, and respect. The fireflies at night are not only lights, but also little lamps for the heart, reminding me that even in the dark, there is always warm light to guide us toward hope.

報告主題	燃燒的智慧，傳承的光	
Report Topic	Wisdom in the Flames, Light of the Legacy	
發表者學校	嘉義縣立民和國民中學	
發表者	林宸祐	LIN,CHEN-YOU
指導者	吳泓陞	WU,HONG-SHENG
摘要	看完這集《吉娃斯愛科學》，我心中湧起一股莫名的感動。以前在理化課本上背誦「燃燒三要素」——燃料、助燃物、燃點時，那些知識對我來說只是冷冰冰的公式，是為了考試而存在的條列式重點。但看著吉娃斯和朋友們為了部落儀式，在山林間尋找製作火把的材料，我才恍然大悟：原來科學是活的，它就藏在我們先人的生活智慧裡。 影片中提到「芭蕉絲」是製作火把的關鍵，這讓我印象非常深刻。原本我以為只要是乾草就能燒，但原來魔鬼藏在細節裡。芭蕉絲之所以被選中，是因為它獨特的纖維結構——鬆散且透氣。這種物理特性像是在微觀世界裡搭建了無數條通風的走廊，讓氧氣能順利進入，同時它的吸附性又能緊緊抓住油脂燃料。這不正是我們課堂上學到的「表面積」與「氧化反應」的應用嗎？看著他們討論乾燥與潮濕纖維的差異，以及有機物受熱黑化的過程，我彷彿看見了科學原理在真實世界中跳動。 然而，最讓我震撼的並不僅是這些科學原理，而是這份知識的來源。原住民長老們或許沒有顯微鏡去觀察細胞壁，也沒有溫度計去測量燃點，但他們憑藉著對土地的熱愛與細膩的觀察，在千百年的嘗試中，找到了與大自然共存的最佳解答。這讓我重新思考「傳統」的定義，那不只是古老的儀式，更是生存智慧的極致展現。 當故事最後，火把在夜色中順利亮起，那團火焰溫暖而穩定。那一刻，我覺得燃燒的不僅僅是芭蕉絲與油脂，更是一種對自然的敬意與文化的傳承。這集動畫讓我明白，科學不只是為了解開考卷上的難題，更是為了讓我們讀懂這片土地的語言，將這份古老的智慧之光，一代一代地傳遞下去。	

English Abstract	After watching this episode of Go Go Giwas, I felt an indescribable emotion welling up inside me. In my physics and chemistry classes, when I used to memorize the "Fire Triangle"—fuel, oxygen, and heat (ignition point)—those concepts felt like cold formulas existing only for the sake of exams. However, seeing Giwas and her friends searching the mountains for torch materials for the tribal ceremony, I suddenly realized: Science is alive, and it is hidden right within the wisdom of our ancestors' daily lives. The mention of "banana fiber" as the key to making torches left a deep impression on me. I originally thought any dry grass would burn, but the secret lies in the details. Banana fiber was chosen because of its unique physical structure—it is loose and porous. This characteristic is like building countless ventilation corridors in the microscopic world, allowing oxygen to flow through smoothly. At the same time, its high absorbency allows it to hold onto the oil fuel tightly. Isn't this exactly the application of "surface area" and "oxidation reactions" we learned in class? Watching the characters discuss the difference between dry and wet fibers and the process of carbonization, I felt like I was seeing scientific principles come to life in the real world. However, what shocked me the most wasn't just these scientific principles, but the source of this knowledge. The Indigenous elders might not have had microscopes to observe cell walls or thermometers to measure ignition points. Yet, through their love for the land and keen observation, and after centuries of trial and error, they found the best answers for coexisting with nature. This made me rethink the definition of "tradition." It is not just old rituals; it is the ultimate manifestation of survival wisdom. At the end of the story, when the torch successfully lit up the night sky, the flame was warm and steady. At that moment, I felt that what was burning was not just banana fiber and oil, but a respect for nature and the passing down of culture. This animation taught me that science is not just about solving difficult problems on test papers; it is about learning to read the language of this land, so that we can pass this light of ancient wisdom down from generation to generation.

報告主題	從部落的自然知識到教室的科學：我的雙軌學習旅程	
Report Topic	From Indigenous Ecological Knowledge to Classroom Science: My Dual Learning Journey	
發表者學校	國立嘉義高級中學	
發表者	莊凱丞	ZHUANG,KAI-CHENG
指導者	黃琦淳	Chi-Chun Huang
摘要	在《吉娃斯愛科學》第四季第 8 集〈天外的想念〉中，故事以布農族傳統樂器「弓琴」展開，把文化與科學巧妙融合，讓我深受感動。動畫介紹弓琴是一種用來表達思念親人的樂器，不能當作弓箭使用。弓弦震動所產生的共鳴輕柔卻穿透力強，承載著族人深刻的情感。透過角色互動，我感受到弓琴不只是樂器，而是連結親人、傳遞愛的象徵，就像動畫中天上一閃一閃的星光，被比喻為思念親人的淚光。 動畫也帶出聲音的科學原理：聲音需要介質才能傳播，在空氣、水或固體中都能前進，但在真空的外太空中完全無法傳遞。原本以為能把弓琴的聲音送上宇宙，卻被提醒太空沒有空氣，聲波無法形成。但科學上的限制並不能阻擋情感，就像劇中爺爺因為怕奶奶寂寞而彈奏弓琴，那份思念自然跨越了距離，成為最溫柔的陪伴。 動畫的太空場景也讓我想到今年 10 月在美國 AISES 遇見的一位太空人。他說上到外太空時，一定要帶著屬於自己族群的笛子，因為那象徵文化的身份與根。這句話深深觸動我：原住民族的音樂與故事不只是傳統，更是面向未來、甚至能陪伴人走進宇宙的力量。 看完這一集，我也想起三年前因先天性心衰竭、在疫情中離世的媽媽。我寫下思念的歌：「母親啊，妳的笑像日出的金色，照亮我走過的每一條路；如今我抬頭向雲的方向她，彷彿聽見妳說：『孩子，別哭，我一直都在。』」我相信，總有一天我會在大塔山的雲霧之間再與她相見。正如動畫最後呈現的，那是一場跨越人間與天上的對話，也讓我明白：聲音會消失，但思念永遠能傳到心裡。	

English Abstract	In Episode 8, “Longing from Beyond the Sky,” from Season 4 of Go Go Giwas, the story begins with the Bunun traditional instrument, the “bow harp,” beautifully blending culture with scientific concepts. The episode explains that the bow harp is used to express longing for loved ones and cannot be used as a bow for shooting arrows. Its gently resonant yet penetrating sound carries the deep emotions of the Bunun people. Through the characters’ interactions, I felt that the bow harp is not just a musical instrument, but a symbol of connection and love—like the twinkling stars in the sky, described as the tears of those who miss their loved ones. The episode also introduces the scientific principles of sound: it requires a medium to travel through air, water, or solids, but cannot propagate in the vacuum of outer space. I originally thought the sound of the bow harp could be sent into the universe, but the show reminds us that without air, sound waves cannot form. Yet scientific limitations cannot restrict emotions. Just as the grandfather in the story plays the bow harp because he worries his wife might feel lonely, his longing reaches her across distance, becoming the gentlest form of companionship. The space scenes in the animation also reminded me of meeting an astronaut this October at AISES in the United States. He said that when he goes to space, he must bring a flute that represents his own tribal culture, because it symbolizes identity and roots. His words deeply moved me: Indigenous music and stories are not only traditions—they are forces that can accompany people into the future, even into outer space. Watching this episode also made me think of my mother, who passed away three years ago during the pandemic due to congenital heart failure. I wrote a song for her: “Mother, your smile shines like the golden sunrise, lighting every road I have walked. When I look up toward the clouds, I seem to hear you say, ‘My child, don’t cry, I have always been here.’” I believe that one day, I will meet her again in the misty clouds of Mount Tashan. Just like the ending of the episode, it becomes a dialogue between the earth and the heavens, reminding me that while sound may fade, longing will always reach the heart.

報告主題	新娘盪鞦韆 單擺運動	
Report Topic	Bride swinging on a swing, simple harmonic motion	
發表者學校	新北市明德高級中學	
發表者	林凱恩	LIN,KAI,EN
指導者	林步剛	LIN,PU-KANG
摘要	這篇作品將科學和情感巧妙結合，讓我對“單擺運動”這一物理現象有了更深的理解。作為物理學中的一個基本運動，單擺表現出的是一種規律的來回擺動，這不僅僅是數學模型中的簡單運動，更像是人類情感的縮影。當我看到“新娘盪鞦韆”的場景時，彷彿看到了人生中反覆的選擇和掙扎。每一次擺動都像是在尋找某種平衡，而每一次的重複都在促使我更深入地理解科學的真諦。這種結合讓我想到了人類對未知的永不放棄的追求，無論是在科學領域還是生活的各個層面。	

English Abstract	This work cleverly combines science and emotion, giving me a deeper understanding of the "simple harmonic motion" concept. As a fundamental movement in physics, the pendulum exhibits a repetitive back-and-forth motion that not only represents a simple physical movement but also mirrors human emotions. When I saw the "bride swinging on a swing," I almost saw the repeated choices and struggles in life. Every swing seemed to search for a balance, and each repetition pushed me further to understand the essence of science. This combination made me think about humanity's endless pursuit of the unknown, whether in the realm of science or in various aspects of life.

報告主題	彩虹伴我走(光的折射)	
Report Topic	A Rainbow by My Side (Refraction of Light)	
發表者學校	國立羅東高級中學	
發表者	李芸嫻	LI Yun-Xian
指導者	吳宏達	Wu Hung-Ta
摘要	光的世界曲折離奇，無論是透過葉片灑下的陽光亦或是燈泡在黑暗中散出的光都是這樣的令 我著迷，在光的世界中，最令我百看不厭的便是彩虹，絢麗的虹光在天空中劃出一道完美的弧 ，但當人想要捕捉它時，它又會在不知不覺間消逝無蹤。 泰雅族有這樣一個傳說，人死後靈魂需通過祖靈守護的彩虹橋才能到達祖靈世界，飛卉在夢 中由於分不清正確的彩虹橋而落入虛空。醒來後，飛卉和吉娃斯到了夢裡飛卉跌落的那處懸 崖尋找彩虹，飛卉卻意外撿到了一塊能讓人「將彩虹帶在身上」的玻璃。不久後，他們遇到了巴彥和狗狗嘎魯，在玩耍時發現，本該出現在天空上的彩虹卻出現在了不遠處一條有高低差的 溪流。 經過巴彥的科普，他們才知道，原來彩虹的形成是因為光在穿過小水滴時會發生折射與反射， 並出現色散現象，白色的陽光被分散成不同的顏色，而光裡色光的折射角度不同造就了彩虹 的七種顏色，這種現象被稱為「光的色散」。由於溪流的高低差激起了水花，同時也讓很多小水 滴浮在空中，這才有了彩虹出現在地面的現象。 這部影片裡非常詳盡的解說了彩虹是如何從一束單調而冰冷的「白光」變成一道道繽紛「彩虹」 ，我也學到了很多除了知識以外的事物。看完整部影片後我才發現，彩虹並不只是一個傳統文 化的寄託、詩句中的著墨，它更是一個結合了真實與浪漫的存在，也許正是因為這樣，它才會 在泰雅族的傳說裡恆久不衰吧。	

English Abstract	The world of light is full of twists and wonders. Whether it is sunlight filtering through leaves or the glow of a light bulb spreading in the darkness, it never fails to captivate me. In this world of light, what I find most fascinating and never grow tired of is the rainbow. Brilliant bands of color arc perfectly across the sky, yet the moment one tries to capture it, it quietly disappears without a trace. There is a legend among the Atayal people that after death, the soul must cross a rainbow bridge guarded by ancestral spirits in order to reach the ancestral world. In a dream, Behuy fell into the void after failing to distinguish the correct rainbow bridge. After waking up, Behuy and Giwas went to the cliff where she had fallen in her dream to search for the rainbow, and there he unexpectedly picked up a piece of glass that allowed one to “carry a rainbow with them.” Not long after, they met Bayan and his dog Galu. While playing together, they discovered that a rainbow—which should have appeared in the sky—was instead visible near a stream with a difference in elevation. Through Bayan’s explanation, they learned that rainbows are formed when light passes through tiny water droplets, undergoing refraction and reflection, which results in dispersion. White sunlight is separated into different colors, and because each color has a different angle of refraction, the seven colors of the rainbow are formed. This phenomenon is known as the dispersion of light. The height difference in the stream caused splashes, allowing numerous tiny droplets to remain suspended in the air, which is why the rainbow appeared on the ground. This video provides a very detailed explanation of how a single, seemingly monotonous and cold beam of “white light” transforms into a vivid and colorful rainbow. Through it, I learned not only scientific knowledge, but many things beyond that as well. After watching the entire video, I came to realize that a rainbow is not merely a symbol within traditional culture or an image found in poetry. It is an existence that combines reality and romance, and perhaps that is why it has endured so timelessly in Atayal legends.

0

報告主題	知識的穀倉	
Report Topic	The Barn of Knowledge	
發表者學校	國立蘭陽女子高級中學	
發表者	吳昀柔	Wu Yun-Rou
指導者	吳宏達	Wu Hung-Ta
摘要	觀看《吉娃斯愛科學 Go Go Giwas》第二季第一集〈知識的穀倉〉後，我對巧妙結合科學原理與原住民族文化的方式留下非常深刻的印象。本集以「穀倉」為核心概念，看似簡單的儲糧主題，其實藏著許多生活中的科學知識，包括濕度控制、發霉機制、生物防治與保存技術等，讓我感受到科學原來就在日常生活的每一個角落。在劇中，吉娃斯跟著族人學習如何保存收成的穀物。長輩教他們必須保持穀倉乾燥、通風，避免穀物受到濕氣侵襲。這部分其實就對應到科學上的「水活性」概念，當環境濕度過高，穀物中的水分會上升，使黴菌、細菌更容易增生，造成糧食腐壞。因此，保持穀倉低濕度，就是利用科學原理來控制微生物的生長。 節目也提到老鼠、蛇等生物會破壞穀物，於是族人會用特定結構與材料來阻擋牠們，例如抬高穀倉，或是使用蛇鼠板。這些方法其實就是「生物防治」與「物理防治」的應用。雖然族人是在長期經驗中學會，但放在科學的角度，就是透過研究動物習性、氣味反應及環境條件來減少糧食損失。 在另一段劇情中，吉娃斯觀察環境溫度如何影響穀物保存。高溫會加速細菌與酵素的作用，使穀物更快變質；而穀倉的通風設計，就是利用空氣流動帶走熱能，降低溫度。這不僅是生活智慧，也是熱傳導與空氣對流的科學概念。 我最欣賞的是，節目沒有把科學當作與文化對立的東西，而是展現它們可以相互補充。族人長年累積的傳統方法，其實都隱含科學原理；而現代科學又能幫助我們更清楚理解傳統智慧背後的原因。吉娃斯在學習的過程中，也展現了科學最重要的精神：觀察、提問、求證。看完這一集，我深刻感受到科學並不是難懂的公式，而是生活中不斷被發現的規律。穀倉不是單純的存放空間，而是一座融合文化與科學的「知識寶庫」。這集讓我學到科學知識，也提醒我要尊重傳統、保持好奇，並勇於探索生活中的每一份智慧。	

English Abstract	After watching Go Go Giwas: Love Science Season 2, Episode 1, "The Granary of Knowledge," I was deeply impressed by the way the program skillfully combines scientific principles with Indigenous culture. Centered on the concept of the granary, the episode shows that what seems to be a simple topic of grain storage actually contains a great deal of everyday science, including humidity control, mold formation, biological control, and preservation techniques. It made me realize that science is truly present in every corner of daily life. In the story, Giwas learns from the elders how to store harvested grain properly. They teach that the granary must be kept dry and well-ventilated to prevent moisture damage. This practice corresponds to the scientific concept of water activity. When environmental humidity is too high, the water content in grains increases, allowing mold and bacteria to grow more easily and causing food to spoil. Therefore, maintaining a low-humidity environment in the granary is essentially a scientific way to control microbial growth. The program also mentions that animals such as rats and snakes can damage stored grain. To prevent this, the tribe uses specific structures and materials, such as raising the granary off the ground or installing barriers to block pests. These methods are practical applications of biological control and physical control. Although these techniques were developed through long-term experience, from a scientific perspective they are based on understanding animal behavior, sensory responses, and environmental conditions in order to reduce food loss. In another scene, Giwas observes how environmental temperature affects grain preservation. High temperatures accelerate the activity of bacteria and enzymes, causing grain to spoil more quickly. The ventilation design of the granary helps remove heat through air

	circulation, lowering the temperature inside. This reflects not only traditional life wisdom but also scientific concepts of heat transfer and air convection. What I appreciate most is that the program does not present science and culture as opposing ideas. Instead, it shows how they complement each other. The traditional methods developed by the tribe over generations are embedded with scientific principles, and modern science helps us better understand the reasons behind this traditional knowledge. Through Giwas's learning journey, the program also highlights the core spirit of science: observation, questioning, and verification. After watching this episode, I deeply felt that science is not just about complicated formulas, but about patterns constantly discovered in everyday life. A granary is not merely a storage space—it is a treasury of knowledge where culture and science come together. This episode not only taught me scientific concepts, but also reminded me to respect tradition, stay curious, and bravely explore the wisdom hidden in daily life.

報告主題	《頂上有學問》重心	
Report Topic	The Core Theme of “Knowledge at the Top”	
發表者學校	國立宜蘭高級中學	
發表者	吳鎮宇	Wu Zhen-Yu
指導者	吳宏達	Wu Hung-Ta
摘要	《Go Go Giwas》（吉娃斯愛科學）是一部動畫科普片，巧妙展現了泰雅族傳統生活智慧。影片將高超的山林生存技能轉化為重心（COG）管理的視覺化學習，揭示了原住民族文化知識的科學本質。本片作為優良的自主學習媒材，能有效促進原住民族及非原住民族學生進行文化與科學交流。 「重心」作為影響身體穩定性的核心物理概念，在日常與運動中發揮關鍵作用。 影片中，角色在崎嶇路面移動時，透過降低重心、擴大支撐基底，達成完美平衡。此動作清晰體現了穩定性與重心高度成反比的原理。理解此原理，比單純執行僵硬訓練動作更有意義。它教導我們如何透過將重心的垂直投影線保持在支撐基底內來穩定身體，這是生活技能，也是許多專業運動員必備的知識與能力。 影片同時展現了重心偏移對運動效率的關鍵影響。角色在負重或高速移動時，會調整身體傾斜角度，確保整體重心維持高效移動。這種模式巧妙利用重力節省能量，是體育中動作省力的基礎。體育教師可利用此模式指導學生，理解跑步、投擲等動作預備姿勢，需策略性向前傾斜重心，以有效地積累動能，從而提升表現。 《吉娃斯愛科學》提供珍貴機會，讓我們運用現代運動科學視角，解讀原住民族的山林知識，擴大科學探究視野。更重要的是，它能成為促進學生、家長、老師及耆老間跨世代學習與文化交流的平台，並透過探討影片內容，培養學生具備表達與科學英語溝通能力，最終讓所有學生共享這份卓越的文化與科學學習資源。	

English Abstract	Go Go Giwas" (Giwas' Science Love) is an engaging animated science documentary that cleverly showcases the traditional knowledge and practical wisdom of the Atayal people. The film's most striking feature is its transformation of sophisticated mountain survival skills into a visual lesson on Center of Gravity (COG) management, revealing the scientific essence behind indigenous cultural knowledge. This film serves as an excellent self-directed learning resource, effectively promoting cultural and scientific exchange between indigenous and non-indigenous students. The Center of Gravity is the fundamental physical concept that influences bodily stability and plays a crucial role in both daily activities and sports. In the film, characters achieve perfect balance while navigating rugged terrain by lowering their COG and widening their base of support. This action clearly demonstrates the principle that stability is inversely proportional to the COG's height. Understanding this principle is more meaningful than merely performing rigid exercises. It teaches us how to stabilize the body by keeping the vertical projection of the COG within the base of support—a skill that is not only vital for survival but also essential knowledge and ability for many professional athletes. The film also demonstrates the critical impact of COG shifts on movement efficiency. When carrying loads or moving at high speeds, characters adjust their body lean to maintain efficient movement of the overall center of mass. This pattern cleverly uses gravity to conserve energy, laying the foundation for movement economy in sports. Physical education teachers can use this model to instruct students on why preparatory postures in running or throwing require a strategic forward lean of the COG to accumulate kinetic energy and enhance performance effectively. In conclusion, "Go Go Giwas" offers a valuable opportunity to apply the lens of modern sports science to interpret the mountain knowledge of indigenous peoples, thereby broadening the scope of scientific inquiry. More significantly, the film can serve as a platform to promote intergenerational learning and cultural exchange among students, parents, teachers, and elders. By discussing the film's content, students can cultivate expressive and scientific English communication skills, ultimately allowing all students to share in this exceptional cultural and scientific learning resource.

報告主題	原住民族是天生的科學家——以《吉娃斯愛科學》中的拼板舟為例	
Report Topic	Indigenous Peoples as Natural Scientists: A Case Study of the Plank Boat in Giwass Loves Science	
發表者學校	國立嘉義女子高級中學	
發表者	邱倍嬉	Qiu Beixi
指導者	侯怡如	Hou Yi RU
摘要	《吉娃斯愛科學》以原住民族文化結合自然科學，引導我重新思考科學的真正意義。影片中出現的佳句「早於太陽、晚於月亮的人」，原意形容勤奮不懈，我將其視為生活哲理：真正的努力不是為了被看見，而是在日常中持續實踐，如同拼板舟在海上穩定前行，順應自然卻不迷失方向。本集介紹浮力原理、材料科學與流體力學等學術概念。從西方科學觀點，拼板舟的結構設計符合物理定律；而在原民科學中，族人透過長期觀察海洋環境、木材特性與實際航行經驗，累積以實證為核心的知識體系，展現與西方科學相同的科學精神。我最欣賞的原民文化，是達悟族在無藍圖情況下完成拼板舟製作的智慧，這代表科學不只存在於公式，而是深植於生活實踐。最令我感動的是，原住民族以尊重自然的態度發展科技，證明人類能與環境共存。原住民族確實是天生的科學家，也為現代社會提供重要的學習典範。這樣的觀點也提醒我，學習科學不只是背誦定義，而是培養觀察、提問與驗證的能力，並在生活中實踐，才能真正理解知識的價值與責任。此經驗使我理解原住民族知識同樣具備科學性，值得被納入教育體系並持續研究與傳承。亦能培養學生尊重多元文化並反思人與自然關係。為未來永續發展奠定良好基礎與行動方向等。	

English Abstract	Giwass Loves Science integrates Indigenous culture with natural science and invites viewers to reconsider the meaning of science. In the episode, the phrase “those who rise before the sun and rest after the moon” originally describes diligence. In my life philosophy, it represents quiet perseverance without seeking recognition. This idea resembles a traditional plank boat that moves steadily across the sea by following natural laws rather than resisting them. The episode introduces scientific concepts such as buoyancy, material science, and fluid dynamics. From a Western scientific perspective, the structural design of the plank boat conforms to physical principles. From the perspective of Indigenous science, knowledge is developed through long term observation of marine environments, wood properties, and actual navigation experiences. Although these knowledge systems differ in form, they share the same scientific spirit of empirical verification and practical application. What I admire most about Indigenous culture is the Tao peoples wisdom in constructing plank boats without blueprints or precise measurements. This practice demonstrates that scientific knowledge is not limited to formulas or written texts, but is deeply rooted in daily life and hands on experience. Science in this sense is lived knowledge transmitted through action tradition and cultural continuity. The most moving aspect of the episode is the way Indigenous peoples develop technology while maintaining respect for nature. This challenges the modern belief that technological advancement must involve dominating the environment. Instead Indigenous wisdom demonstrates that humans can coexist harmoniously with nature. Indigenous peoples can therefore be regarded as natural scientists whose knowledge systems deserve recognition inclusion in education and continued study. This experience also reminds me that learning science is not merely memorizing definitions but cultivating observation inquiry and responsibility in everyday life. Such understanding encourages respect for cultural diversity and rethinking relationships between humans nature and sustainability. This aligned perspective reflects the arguments presented in the Chinese summary and emphasizes Indigenous knowledge as a legitimate scientific system. By analyzing cultural practices through scientific concepts, the episode bridges humanities and science education. It supports interdisciplinary learning, cultural respect, and sustainable thinking among students. For high school learners, this approach expands scientific literacy beyond laboratories and textbooks. It encourages reflective learning, ethical responsibility, and awareness of local knowledge. Therefore, integrating Indigenous science into education not only enriches curricula but also fosters global citizenship, critical thinking, and long term commitment to environmental stewardship for future generations worldwide and shared planetary responsibility.

報告主題	與星月共舞的知識之樹：從《吉娃斯愛科學》看原民科學與西方科學的交會	
Report Topic	The Tree of Knowledge Dancing with Stars and Moon: Indigenous Science and Western Science in Giwaves Loves Science	
發表者學校	國立嘉義高級中學	
發表者	柯南	KO NAN
指導者	王明宗	Wang, Ming-Tsung
摘要	在《吉娃斯愛科學》第四季第九集〈與星月共舞的樹〉中，故事從布農族對台灣杉的族語名稱出發，將文化記憶與科學探索自然結合，引領我重新理解知識的來源。劇中一句「彷彿能聽見樹在說話」，成為我的生活哲理：唯有願意停下腳步、專注傾聽，才能真正理解世界的回應。作品介紹愛玉製作、月相變化與潮汐形成等科學概念，包含同步自轉、引潮力與天體運動。西方科學以數學模型與物理定律解釋自然現象，原民科學則透過長期觀察星月、山林與季節節律，將經驗轉化為可傳承的知識，兩者途徑不同，卻同樣追求理解宇宙的秩序。我最欣賞的原民文化，是將自然視為具有生命與記憶的存在。這並非迷信，而是一種建立人與環境關係的倫理智慧。最令我感動的是，角色在意外跌落後，看見整片台灣杉的全貌，提醒我理解事物不能只停留在單一視角。這部作品讓我體會，原住民族以生活為實驗室、以自然為課本，是能將觀察化為知識的天生科學家，也引導我以更謙遜的態度學習世界。當我抬頭看月亮、聽風過樹梢，便懂得科學不是冷冰冰的答案，而是把每一次好奇變成可驗證的提問。未來我想把這份敬畏帶進學習與行動：少一些急著下結論，多一些重新觀察與反思。也願守護山林，讓知識與土地共生不息。	

English Abstract	This abstract reflects on Episode Nine of Season Four of Go Go Giwas, titled Dancing with the Stars and the Moon Trees, in which the story begins with the Bunun Indigenous name for the Taiwan cedar and connects cultural memory with scientific exploration of nature. Through this narrative, the episode guides viewers to reconsider the origins of knowledge and the relationship between science, culture, and everyday experience. A key line, It feels as if the tree is speaking, becomes a personal philosophy of life, suggesting that only by slowing down and listening carefully can people truly understand the world's responses. The episode introduces scientific concepts such as jelly fig production, lunar phase changes, tidal formation, synchronous rotation, tidal force, and basic celestial motion. From a Western scientific perspective, these phenomena are explained through physics, astronomy, and mathematical models that describe natural laws. In contrast, Indigenous science is formed through long term observation of stars, forests, seasonal rhythms, and environmental change, transforming lived experience into transferable knowledge. Although their approaches differ, both systems seek to understand patterns, order, and meaning within the universe. What I admire most about Indigenous culture is the view of nature as a living entity with memory and agency. This perspective is not superstition, but an ethical framework that shapes respectful relationships between humans and the environment. One of the most moving moments occurs when the characters fall unexpectedly and suddenly see the full landscape of Taiwan cedars. This scene symbolizes that genuine understanding requires changing perspectives rather than remaining within a single viewpoint. Through this story, the animation demonstrates that Indigenous peoples use daily life as a laboratory and nature as a textbook. It shows how careful observation can be transformed into systematic knowledge grounded in lived experience. This reflection helps me realize that science does not exist only in formulas or textbooks, but also flows through language, stories, and landscapes. When I look at the moon or listen to the wind moving through trees, science becomes a process rather than a cold answer. It is the act of turning curiosity into questions that can be examined and verified. Inspired by this understanding, I hope to carry a sense of respect into my future learning and actions. Rather than rushing to conclusions, I aim to observe more carefully, reflect more deeply, and remain open to multiple ways of knowing. I also hope to protect forests and cultural heritage so that knowledge and land may coexist sustainably. By connecting science with culture and environment, this episode encourages responsibility, humility, and thoughtful engagement with the world. It ultimately inspires students to learn continuously, honor their roots, and recognize Indigenous science as vital knowledge today in modern educational contexts.

報告主題	走向外太空的原民智慧–以《吉娃斯愛科學》第四季第十集〈石板屋天窗〉探討原住民族科學思維與責任倫理	
Report Topic	Indigenous Wisdom Beyond Earth: Scientific Thinking and Responsibility Ethics in Go Go Giwas, Season 4 Episode 10 “The Skylight of the Stone Slab House”	
發表者學校	國立嘉義女子高級中學	
發表者	汪雅蓉	WANG, YA – RONG
指導者	侯怡如	Hou Yi Ru
摘要	《吉娃斯愛科學》讓我第一次看見原住民族角色走進外太空，顛覆我對原住民族只存在於高山或海洋的既定想像。劇中一句「只有真的去做，才會知道能不能成功」，成為我的生活哲理，提醒我面對未知要勇於嘗試。故事從太空種植愛玉籽的構想出發，帶出植物生殖、生物性別分化、失重環境對生命影響等科學概念。以西方科學觀點，這些現象可透過植物學與物理學理論加以解釋；而原住民族科學則源自長期觀察與實作經驗，例如排灣族能分辨愛玉母籽，展現生活中累積的實證智慧。我最欣賞的原民文化，是將知識與責任緊密結合。知識不只是理解自然，更包含對族群、動物與環境的守護。劇中排灣族弟弟勇於承擔過錯，並為了拯救象徵族群精神的熊鷹而行動，使我深受感動。此外，石板屋利用光線判斷時間的設計，讓我理解家屋本身即是一座精密的科學裝置。這樣的敘事讓我相信，科學不是遙不可及的公式，而是源於土地、生活與勇敢行動的智慧結晶，並引導青年在傳統與現代之間找到屬於自己的學習方向與文化自信，並持續前行探索未來的可能性與責任感，並付諸實踐不退縮向前走。整體而言，作品清楚呈現原住民族透過觀察、實驗與反思累積知識的過程，證明原住民族本就具備完整的科學思維，是天生的科學家。	

English Abstract	This paper reflects on *Go Go Giwas*, Season 4 Episode 10, The Skylight of the Stone Slab House, which presents Indigenous characters exploring outer space and challenges the common stereotype that Indigenous peoples belong only to mountains or oceans. By placing Indigenous knowledge within a futuristic space narrative, the episode expands understandings of Indigenous identity, creativity, and scientific capability. A central line, "Only by truly doing something can we know whether it will succeed," becomes a guiding life philosophy that highlights courage, action, and learning through direct experience. The story begins with the idea of planting aiyu seeds in outer space and introduces important scientific concepts, including plant reproduction, biological sex differentiation, and the influence of microgravity on living organisms. From a Western scientific perspective, these phenomena can be explained through botany and physics using empirical models and controlled experimentation. In contrast, Indigenous science is portrayed as knowledge accumulated through long term observation, hands on practice, and intergenerational transmission. The Paiwan people's ability to identify female aiyu seeds demonstrates a sophisticated empirical system rooted in daily interaction with the natural environment. Although the methods differ, both scientific traditions pursue understanding, prediction, and practical application. The Indigenous cultural value most admired in the episode is the inseparable relationship between knowledge and responsibility. Knowledge is not treated as neutral information but as a moral commitment to community, animals, and the land. One of the most moving scenes occurs when the Paiwan boy bravely admits his mistake and chooses to protect the crested serpent eagle, an animal representing tribal spirit and cultural continuity. His actions embody accountability, ecological ethics, and respect for life rather than personal success. Another important representation of Indigenous science appears in the stone slab house, where a skylight is designed to determine time through the movement of sunlight. This architectural feature reveals that a house functions not only as shelter but also as a precise scientific system shaped by environmental understanding. Everyday living spaces thus become instruments for observing natural rhythms and sustaining life. Overall, the episode demonstrates that science is not confined to formulas, laboratories, or advanced technology. Instead, it emerges from land based living, careful observation, experimentation, and reflection. By connecting Indigenous knowledge with modern scientific imagination and space exploration, the narrative strengthens cultural confidence and encourages Indigenous youth to view themselves as capable knowledge producers. The episode ultimately affirms that Indigenous peoples possess complete scientific thinking systems developed through lived experience. It strongly supports the claim that Indigenous peoples are, by nature, scientists whose

	knowledge deserves recognition, respect, and continued transmission within contemporary science education. Such representations are especially meaningful in education because they broaden definitions of scientific literacy, validate multiple ways of knowing, and promote ethical awareness. When Indigenous narratives are positioned alongside academic science, students learn that curiosity, responsibility, and perseverance are shared foundations of inquiry, supporting inclusive learning environments and sustainable futures across diverse communities and generations globally and locally within contemporary classrooms today and beyond formal schooling contexts for future learners everywhere.

Go Go Giwas And I

「吉娃斯愛科學與我」研討會簡章

壹、計畫緣起

隨著 108 課綱強調科學素養的提升，學生對科學研究的興趣逐漸增加。本研討會(Go Go Giwas And I(吉娃斯愛科學與我) Oral Presentation Conference 旨在提供一個跨族群、跨年齡的科學交流平台，讓國小至高中學生能夠分享吉娃斯（Giwas）科學自主學習心得，展現原住民族科學研究的創意實作與英語表達能力，並促進家長、老師與耆老的參與，共同支持「全民原教」，提升青少年的多元文化視野與科學思考能力。

貳、計畫目的

一、提供原住民族及非原住民族學生分享原民科學平台，並期待藉由 Go Go Giwas (吉娃斯愛科學)為自主學習優良教材為媒材，培養表達與科學英語溝通能力。

二、促進學生、家長、老師及耆老之間的跨世代學習與文化交流。

三、透過原住民族科學實作，擴大科學探究的視野，提升學生對科學探究的興趣。

參、補助及辦理單位

一、補助單位：國家科學及技術委員會

二、主辦單位：國立清華大學學習科學與科技研究所

三、承辦單位：原住民族科學發展中心

四、協辦單位：清華網路文教基金會

肆、聯絡方式

1、 國立清華大學原住民族科學發展中心 電話: 035715131

2、 蔡明哲主任

伍、活動時間與地點

1、 活動時間：**2026 年 1 月 31 日（星期六）** 09:00-17:00。

2、 地點：國立清華大學竹屋（新竹市光復路二段 101 號）。

陸、口頭發表之出席人數含指導老師（家長或老師或耆老）。

1、 國小:8 位學生+8 位家長或老師或耆老。

2、 國中:8 位學生+8 位家長或老師或耆老。

3、 高中:8 位學生+8 位家長或老師或耆老。

柒、研討會報告規則及相關規定

一、報名方式

1. 即日起至 **2025 年 12 月 15 日（星期一）17:00 前**，填寫報名表單：
   https://forms.gle/2qXYmQGUV3uqZanQA（內容詳如附件一）

2. 請填寫個人基本資料，並提交 500 字英語摘要（附中文翻譯）如附件一。
3. 摘要撰寫方式，方向不拘，至少英語 350 字以上。

二、錄取公告

1. 經評審後，將於 **2026 年 1 月 2 日（星期五）** 公告於飛鼠部落網站，
2. 錄取 Go Go Giwas And I 「吉娃斯愛科學與我」研討會之師生名單，會由國立清華大學發文公告各縣市教育局及各級學校。

三、報告規則

1. 每位學生報告時間十分鐘，第九分鐘響第一聲鈴，第十分鐘響第二聲鈴即須結束並下台。
2. 呈現方式：口語、歌唱或肢體表演等皆可創意表達。
3. 所有指導教師（家長、教師或耆老）均不得上台協助，僅能於台下精神支持。
4. 報告當日使用語言均為英語，可搭配自然手勢表達，提升口語溝通清晰度。
5. 報告內容為觀賞《吉娃斯愛科學》動畫系列影片之心得或因動畫啟發之發想。
   《吉娃斯愛科學》動畫觀看網址:

公視+:https://reurl.cc/bNnM4M

原金動畫 TV:https://www.youtube.com/c/EngineTV

四、證明與時數

1. 完成報告之學生與指導老師將獲頒發 Go Go Giwas And I 「吉娃斯愛科學與我」研討會參加證明。
2. 全程參與之教師核發 全國教師在職進修網 7 小時時數。

五、保證金與費用補助

1. 錄取者須繳交 保證金 1,000 元（報告後全額退還）。
2. 匯款資料：**兆豐國際商業銀行（代碼 017）帳號 215-10-61006-5**

   戶名：**財團法人清華網路文教基金會**。
3. 請於 **2026 年 1 月 2 日（星期五）**公告後上傳匯款證明並回填帳戶後五碼。

六、出席費與稿費

1. 學生：出席費 1,200 元 + 稿費 800 元。
2. 指導家長 / 教師 / 耆老：出席費 2,000 元。

七、交通與住宿補助

1. 可核銷交通費：

   (1)請搭乘大眾運輸。

   (2)自用車每公里 3 元（來回計算）。
2. 距離清大竹屋 60 公里以上者，可申請 2026/1/30（星期五）前一晚住宿補助（國立清華大學之清華會館）。

八、文稿、影像拍攝與使用同意

1. 本活動將進行文稿展示、活動紀錄、攝影與影音拍攝（含團體照、報告影像與活動花絮）。
2. 文稿與所拍攝影像將僅用於教育推廣、課程紀錄、成果發表及非營利公開展示之用途（如研討會手冊、學校與主辦單位網站、社群平台等）。報名參加者視為同意上述之影像拍攝與使用授權。

九、環保政策

1. 本研討會不另印製紙本手冊。
2. 當日提供會議手冊及摘要 QR Code 供下載參閱。
3. 當日發表者及參加者請攜帶環保杯及環保餐具。

十、早鳥方案

1. 為鼓勵學生提前準備與投入研討會，於 **2025 年 12 月 10 日（星期三）前** 完成下列兩項者，將納入早鳥抽獎名單：

   (1)完成線上報名表

   (2)提交 500 字英語摘要（附中文翻譯）一篇。

2. 於研討會閉幕式，自國小組、國中組及高中組出席學生，各組分別抽出 1 名，共 3 名，可獲「吉娃斯小禮物」一份。

捌、研討會 Schedule

時間	活動內容	講師/負責人	備註
09:00~09:30	報到	特階講師	提供測試報告簡報
09:30~09:45	耆老祈福	原住民族耆老	族語祈福
09:45~10:00	開幕式:Opening Ceremony	清華大學原住民族科學發展中心/傅麗玉教授	(英文主持)
10:00~10:20	吉娃斯愛科學新一季首映會	特階講師	(英文主持)
10:20~10:30	休息/準備時間	休息	餅乾/點心/茶包
10:30~12:00	國小學生分享吉娃斯心得(英文) Elementary school students share their Giwas reflections	主持:新北市立明德高中/林步剛老師	英文報告:每組 10 分鐘(各 8 組)
12:00~13:00	午餐	特階講師	清大竹屋外
13:00~14:30	國中學生分享吉娃斯心得(英文) Junior high school students share their Giwas reflections	主持:臺北市立西湖國小/吳杏惠老師	英文報告:每組 10 分鐘(共 8 組)
14:30~14:40	休息時間/茶點時間	特階講師	餅乾/點心/茶包
14:40~16:10	高中學生分享吉娃斯心得(英文) High school students share their Giwas reflections	主持:臺北市立西湖國小/吳杏惠老師	英文報告:每組 10 分鐘(共 8 組)
16:10~17:00	吉娃斯科學任務：竹屋探索 Giwas Science Mission at Bamboo House	特階講師	清大竹屋內

附件一

學生中文姓名		English Name	
學生家長或監護人		聯絡手機	
指導老師姓名		English Name of Advisor	
參加者的學校		Participant School	
年級**(Grade)**		班級(Class)	
座號(Number)		相關備註 (Additional Remarks)	
學生家長或監護人簽名同意參加		報告之吉娃斯愛科學(Go Go Giwas) 第___季____集/名稱：	
Oral Presentation topic 報告主題			
英文： 中文：			
abstract (≤500 words)			
英文： 中文：			

版權頁

書名：Go Go Giwas & I 吉娃斯愛科學與我 學生研討會 發表論文集

主編：傅麗玉

編輯群：林步剛、蔡明哲、鄭筠茜（依姓氏排序）

補助單位：國家科學及技術委員會

主辦單位：國立清華大學學習科學與科技研究所

承辦單位：國立清華大學原住民族科學發展中心

協辦單位：清華網路文教基金會

出版日期：中華民國 115 年 1 月 31 日