



SCIENCE MAGAZINE

Issue no. 8 | April 2023

Event

**Official Visit from The Minister
of Education of Singapore to 7
SEAMEO Centres in Indonesia**

Collaboration

**Collaboration STEM Programme
SEAQIS with PHR
was Successfully Conducted !!!**

SEAQIS Corner

Welcoming Interns in SEAQIS

**Official Visit from The Minister of
Education of Singapore to 7
SEAMEO Centres in Indonesia**

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COMPUTATIONAL THINKING



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Dear Beloved readers of Q-Science Magazine,

In this era of progress and recovery, SEAQIS is contended to be able to keep improving our contribution to societies across Southeast Asia. Our latest efforts in widening our programme collaboration will surely be a starting point in our journey of coming back up in our feet and taking every necessary step in improving the quality of education in Southeast Asia.

This edition covers our Centre's latest activities within the last six months, including our events, collaborative programmes, trainings, popular science articles, and so much more.

May we all keep on thriving as the world do today. Have a pleasant experience reading this edition.

Dr Indrawati
Director

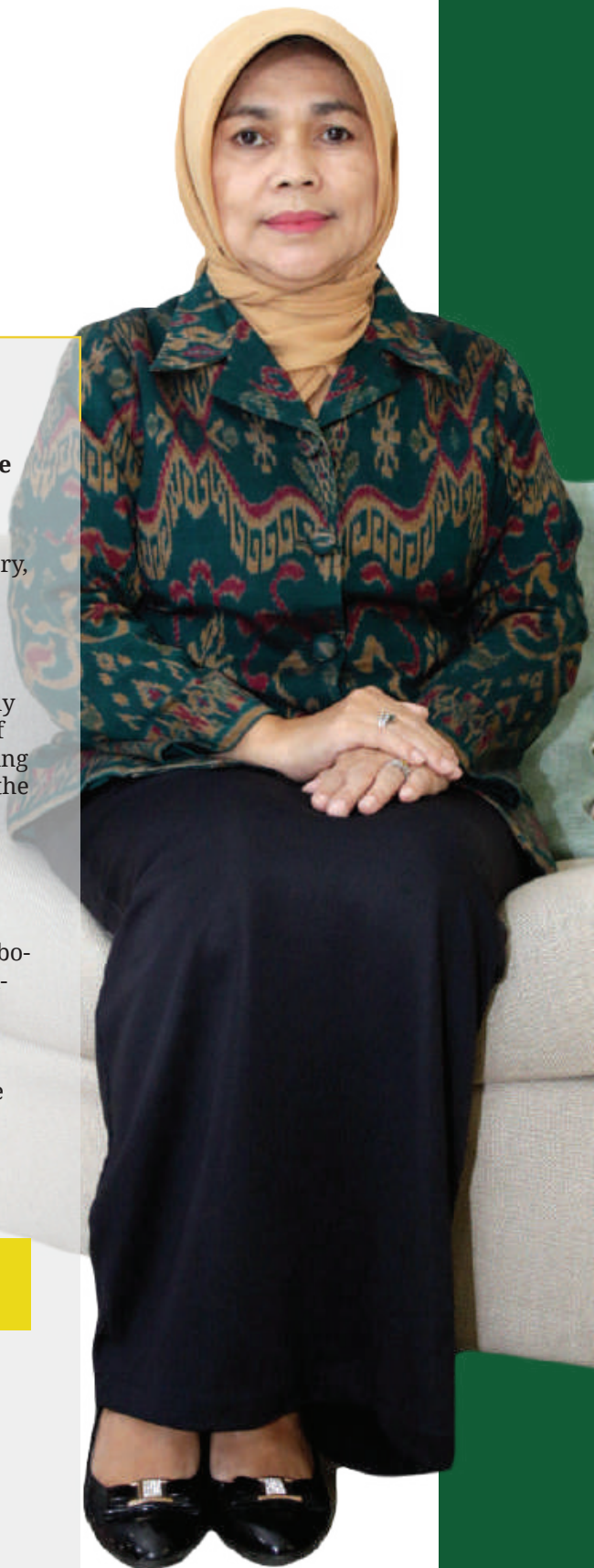


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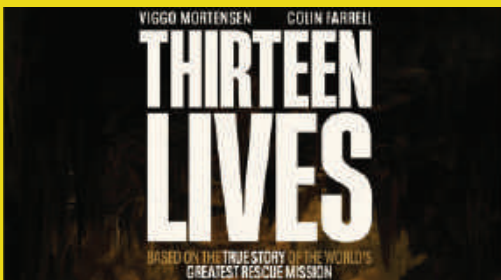
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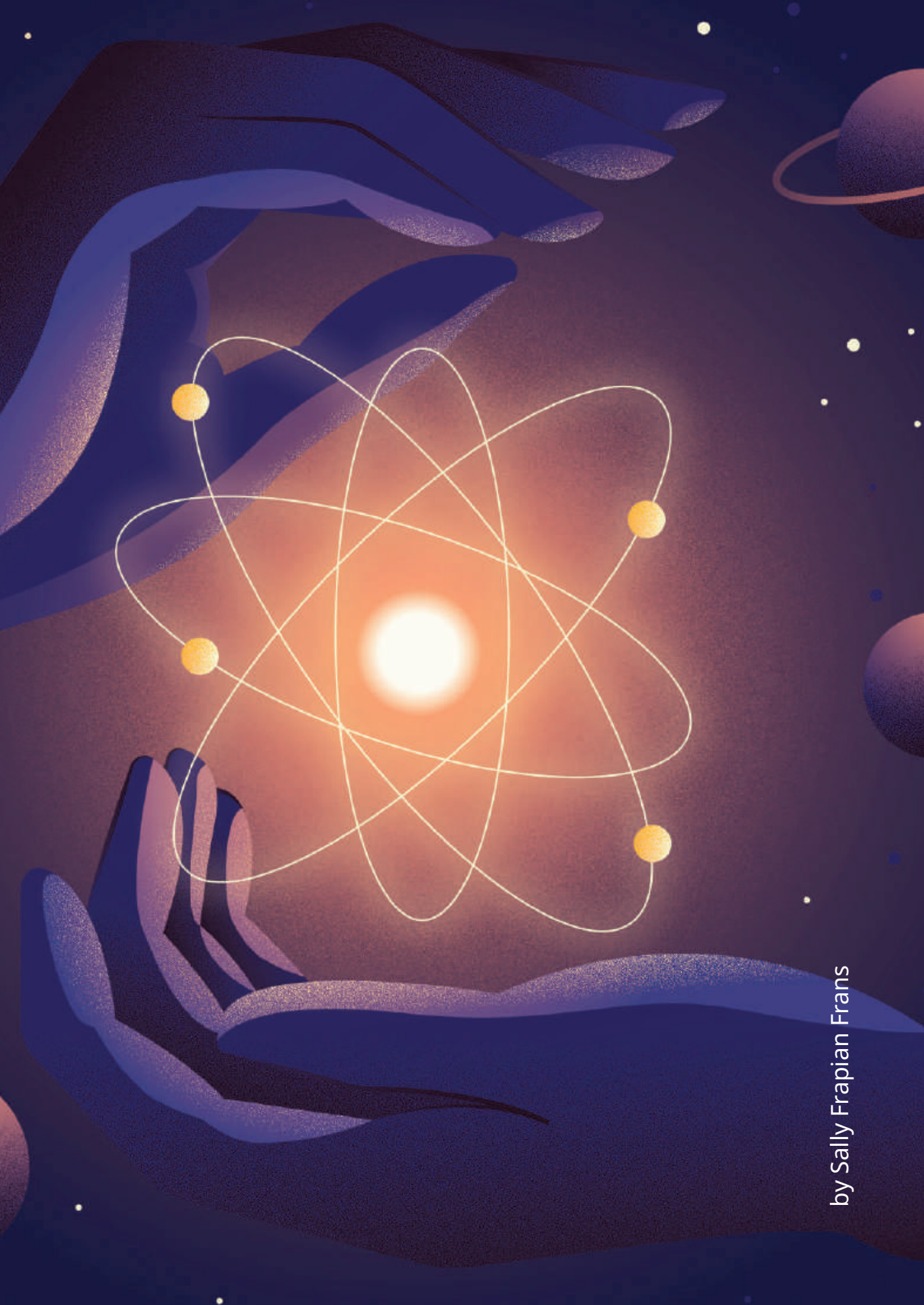
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by Sally Frapian Frans

**Hello
Q Science
Magazine
Readers!**





Editor Message

partnership@qitepinscience.org

Welcome to our eighth edition of Q-Science Magazine. Firstly, we would like to express our gratitude to Almighty God for the publishing of this eighth edition. Secondly, we would also like to give high appreciation towards our editorial staff and contributors for their efforts in producing this magazine.

There may be mistakes and inaccuracies in this publication; thus, criticisms, comments, and suggestions are extremely welcome as they will help us improve the next edition. In this edition, we highlight various noteworthy activities, including the 5th International STEM Study Contest, the 52nd SEAMEO Conference and 2022/2023 SEAMEO Service Award, Training Course on Science Classroom Supervision, and so forth. There are also articles made by teachers from SEAMEO member countries.

We hope this magazine provides you with many fresh perspectives on the current problems in Science.

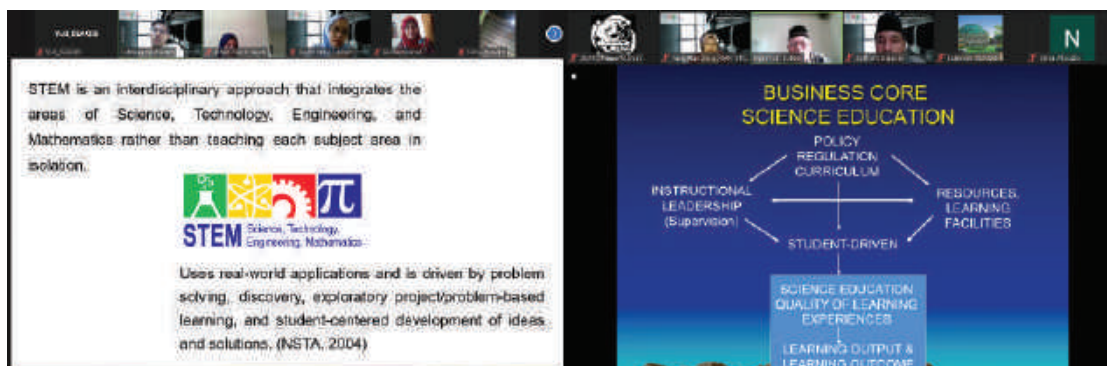
Thank you very much and happy reading!

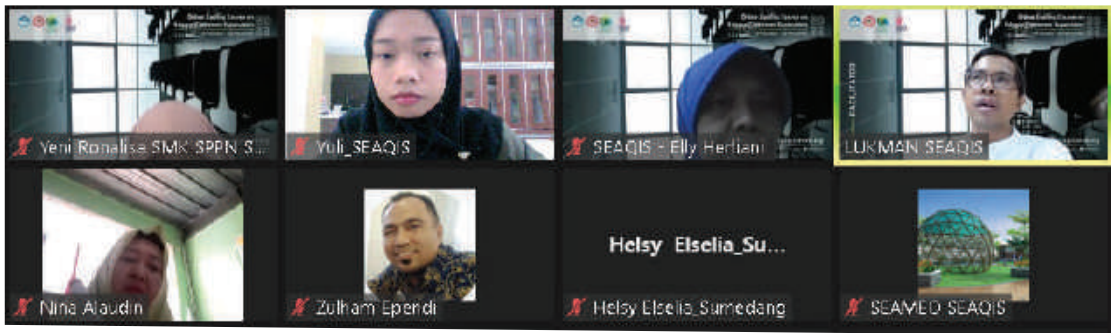


Science Classroom Supervision 2022

TTraining Course on Science Classroom Supervision is one of the SEAQIS' flagship programmes to equip school principals and supervisors in academic supervision. SCS activity was held from 24 October to 2 November 2022 through online platform with 16 principals, vice principals, and supervisors who had passed the selection. Dr Indrawati as the Director of SEAQIS officially opened the SCS 2022, while Mr Reza Setiawan (Deputy Director for Programme) officially closed this event.

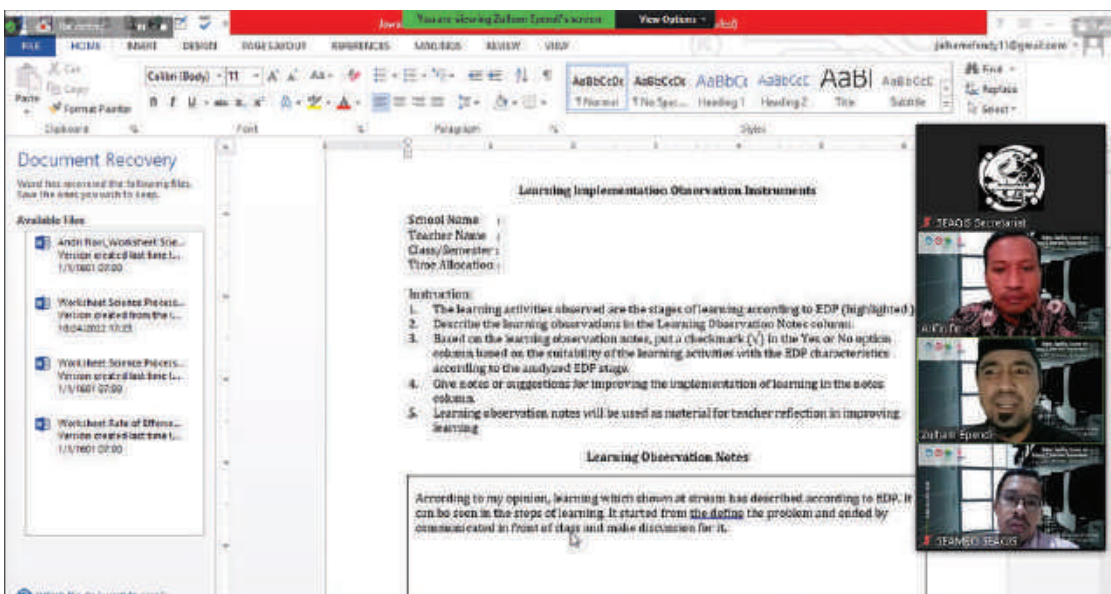
In the beginning and at the end of the activity, the participants were required to do a pre-test as well as a post-test. The event was facilitated by the experts in the field of education and supervision, such as Dr Harry Firman (Universitas Pendidikan Indonesia); Prof Dr H. Jam'an Satori (Universitas Pendidikan Indonesia); Prof Dr H. Johar Permana (Universitas Pendidikan Indonesia); and SEAQIS academic team with synchronous and asynchronous learning models. Through academic supervision activity, principals or





supervisors are expected to provide services, guidance, and assistance to improve the competence of teachers in learning and classroom management.

In this SCS activity, the participants had a lot of discussion with the resource persons and facilitators regarding the materials on Trends and Issues on Science Education, Science Classroom Supervision New Paradigm, Professional Learning Community (PLC), and so on. They also responded to each other while presenting the results of their tasks. During the closing, Ms Andri Novi Lestari gave her testimony after following all the SCS activities and expressed her gratitude to SEAQIS for organising this insightful activity.





Official Visit from The Minister of Education of Singapore to 7 SEAMEO Centres in Indonesia

Jakarta, 18 October 2022 – The Minister of Education of Singapore, HE Mr Chan Chun Sing, visited Indonesia as one of his roles as the President of Southeast Asian Ministers of Education Organization (SEAMEO) Council. The last visit done by the SEAMEO Council President to Indonesia was in April 2016, where General Dapong Ratanasuwan, the Minister of Education of Thailand who was officiated at that time, attended the 2nd Strategic Dialogue for Education Ministers (SDEM) in Bandung. All SEAMEO Centres in Indonesia were also invited to participate in this event. During the COVID-19 pandemic, there was no visitation paid by the SEAMEO Council President to SEAMEO member countries, until now.

Indonesia is the second country visited by HE Mr Chan Chun Sing, after Malaysia in last July, where he had the chance to do dialogue with all Malaysian SEAMEO Centres.

In Indonesia, HE Mr Chan Chun Sing also had the opportunity to do bilateral dialogue with the Minister of Education Culture Research and Technology (MoECRT) of Indonesia, Mr Nadiem Makarim, on October 18, 2022, morning. After that, Mr Chan Chun Sing paid a visit to 7 (seven) SEAMEO Centre in Indonesia, they are SEAMEO BIOTROP, SEAMEO CECCEP, SEAMEO QITEP in Language, SEAMEO QITEP in Mathematics, SEAMEO QITEP in Science, SEAMEO RECFON, and SEAMEO SEAMOLEC. The welcoming ceremony took place at the SEAMEO SEAMOLEC office, Complex Universitas Terbuka, South Tangerang, on Tuesday, October 18, 2022, noon time.

The Ambassador of Singapore in Jakarta, Mr. Kwok Fook Seng, also attended the ceremony, with the Counsellor and delegates from the Ministry for Education of Singapore. The MoECRT was represented by the Director



General of Early Childhood, Basic, and Secondary Education, Dr Iwan Syahril, with delegates, and a representative from SEAMEO Secretariat. The ceremony began by a formal luncheon. Continued by visit to a small exhibition booth where all SEAMEO Centres got good chance to explain about their roles and functions in supporting literacy and education in Southeast Asia through their flagship programmes.

In his remarks, Mr Chan Chun Sing appreciated each of the respective SEAMEO Centres in Indonesia and will support other innovations to be carried out. “Let us continue to work together and I look forward to working closely with all of you.”

Dr Iwan Syahril added, “The Ministry of Education have a high hope for SEAMEO Centers in Indonesia that have strategic roles to not only implement the 7 SEAMEO Priority Areas for the region, but also to support the current Indonesia education policy, namely Emancipated Learning.”

On behalf of all Centre Directors, Dr Wahyudi, the Director of SEAMOLEC and as the host of the event, emphasized that, “7 SEAMEO Centres in Indonesia are ready to support the education priorities in Southeast Asia through its flagship programmes, in order to realize the SEAMEO mission of improving the quality of human resources in the region.”





The 52nd SEAMEC Conference and 2022/2023 SEAMEO Service Award (SSA)

Two officials from SEAQIS, Mr Zuhe Safitra and Mr Heri Setiadi, attended the 52nd South-east Asian Ministers of Education Organisation Council (SEAMEC) Conference in Manila, the Philippines, from 8 to 10 February 2023. The conference was attended by the Ministers of Education from 11 SEAMEO Member Countries, SEAMEO associate members, affiliate members, as well as Centre's directors and organised by the Philippines' Department of Education and the SEAMEO Secretariat, with the theme "Transformation through Learning Exchange: Build-

ing Resilient Systems as a Region".

The conference was initiated with the In-Camera session in which only the heads of delegates and designated participants could participate in this session. The next session was Strategic Dialogue for Education Ministers which was conducted behind the closed door. During the conference, the Vice President and the Philippines Secretary of Department of Education, Ms Sara Z. Duterte was appointed as the President of the Council for a term of two years.

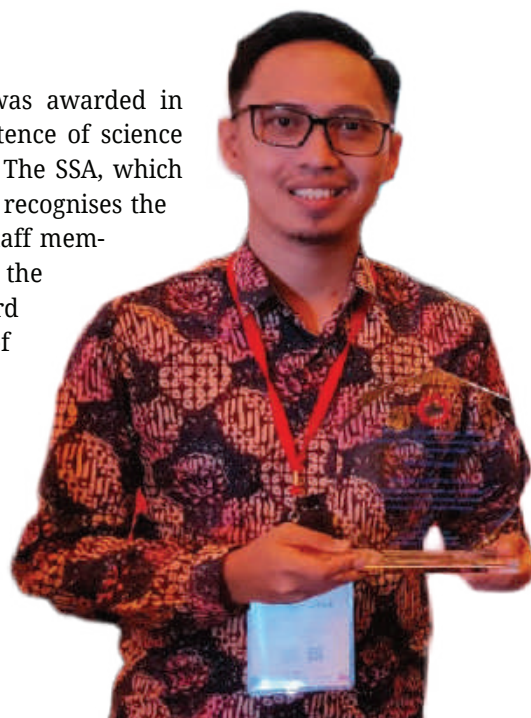
In this event, Mr Heri Setiadi receipt the





2022/2023 SEAMEO Service Award (SSA) that was awarded in recognition of his efforts to improve the competence of science teachers and education personnel in the region. The SSA, which was launched in 2003 and is awarded biennially, recognises the hard work and dedication of SEAMEO Centres' staff members who have made a strong contribution to the organisation's goals and missions. The award ceremony was held during the welcome dinner of the conference.

Upon receiving the award, Mr Heri Setiadi expressed his gratitude in being a part of SEAQIS' mission and said that the honour would not have been possible without the support of his colleagues, supervisors, and Centre's Board of Directors.





Collaboration STEM Programme SEAQIS with PHR was Successfully Conducted !!!

The past 8 months or so has witnessed a continuous and strong momentum of the development of the Competency Improvement Programme for Teachers, Principals, and School Supervisors in STEM Learning in The Working Area of PT Pertamina Hulu Rokan (PHR) WK Rokan. Following the Focus Group Discussion held in July 2022 and In Service Training 1 conducted in August 2022, a new stage called On the Job Learning (OJL) was initiated to further boost the teachers' pedagogical methods in STEM learning. It consisted of two phases, namely OJL 1 and OJL 2 which involve the preparation of teaching materials for implementing STEM learning and the implementation of STEM learning in class respectively.

OJL 1 was conducted online from August to December 2022. The participating teachers were guided and supervised by school principals and supervisors to prepare STEM teaching materials consisting of teaching plans (RPP) and student performance sheets (LKPD). The teaching materials were drafted at each school with a joint effort with the SEAQIS facilitators as guiders who also actively conducted discussions with the teachers

through WhatsApp group and Zoom Meeting. Besides, Participants were asked to develop additional STEM topics to be implemented in class. Thus, each school had a minimum of two topics on STEM learning.

Different from OL1, during the OJL2 phase lasting from 24 January to 2 February 2023, the SEAQIS team worked on-site, observing STEM learning in one school of each level in every city/regency within the targeted areas. The first cities to be observed were Pekanbaru and Dumai, followed by Siak and Kampar Regencies, with the observation ending at Rokan Hilir, Rokan Hulu, and Bengkalis. Generally, the teachers were able to implement good STEM learning and create many interesting products that have the potential of becoming the region's specialties, such as corn syrup from Pekanbaru; guava gummies and batik eco print from Siak Regency; pineapple peel eco enzyme from Dumai; aloe vera gummies and pretty cups made of recycled glass bottles from Rokan Hilir Regency, and rebon floss from Bengkalis Regency.

Next there came the dissemination at the MGMP/KKG (teacher association) carried out on 15, 16, and 28 February 2023 in 21 locations for



elementary, junior high, and high school levels in seven cities/regencies Working Areas of PT Pertamina Hulu Rokan: Pekanbaru City, Dumai City, Kampar Regency, Siak Regency, Bengkalis Regency, Rokan Hilir Regency, and Rokan Hulu Regency, with a total of 289 Science teachers and school principals from 108 schools engaged in it. It began with a presentation on STEM materials by the SEAQIS facilitators, followed by science activities based on the engineering design process. And it was ended with a best practice presentation on the results of STEM implementation learning from the trainees (IN-1).

During this process, the training participants (IN-1) delivered STEM-based lesson plans and student worksheets which they had developed and implemented in class. The participants also displayed STEM learning products which are made by students and which are generally local in context, meaning: bringing up problems or main commodities and characteristics of each school/city/regency. From the results of these activities, teachers and principals are interested in implementing STEM learning by pointing out issues and characteristics of their respective schools.



The day 15 March 2023 saw a successful close to the program through an exhibition of the STEM Learning Output Implementation held at SMA Negeri 1 Pekanbaru. The exhibition caught wide attention outside the program personnel ,attracting 100 teachers from Pekanbaru and leaders such as Mr Pahmijan, the Head of High School Improvement Department under the Education Bureau of Riau Province, Ms Suwarni, the Head of Junior High School Curriculum Division under the Education Bureau of Pekanbaru, Mr Yusmanidar, the Head of Education Bureau of Dumai Regency as well as Corporate Secretary of PHR and SKK Migas Sumbagut.

What appealed to the visitors most were probably the various kinds of works of the program-participants, ranging from device prototypes,inviting food to the lesson plans and student worksheets. These allowed visitors to have a full picture of how the learning programme progressed and came to fruition.

In a speech delivered by Dr Indrawati, the Director of SEAQIS, she expressed her gratitude for the trust given by PHR and the support, not only from the Education Bureau of Riau Province, but also from the targeted cities and regencies of this programme. She also stressed that numbers spoke for themselves. “Starting from In Service-1 until the dissemination

session, this programme has involved 143 participants, consisting of 21 school superintends, 40 headmasters, 38 high school teachers, 22 junior high school teachers, and 22 elementary schools from seven regencies/cities. In addition, there are 290 participants, comprising 204 teachers and 86 headmasters from 108 schools around the targeted areas who attended the dissemination session of STEM Learning. To our great delight, the total number of beneficiaries of this programme amounts to 3,403 or even more, including 533 teachers and more than 2,870 students.”

Overall, this programme succeeds in boosting the pedagogical competence of teachers in planning and implementing STEM earning as well as the capacity of headmasters and superintends to supervise it.

This point is further supported by the statement of Mr Novendri, the Head of Teacher and Education Personnel Development Department under the Education Bureau of Siak Regency, who also participated in this programme as an observer . “This training is highly beneficial and has an amazing concept of improving the quality of education for the advancement of the nation’s human resources. We hope that this is not the end, but the beginning of STEM Learning Programme,” he said.







The 5th International STEM Study Contest (ISSC) was Held Successfully

The 5th International STEM Study Contest (5th ISSC) has launched as one of the highlights of Maker Camp. This event is a part of The Belt and Road Teenager Maker Camp & Teacher Workshop which conducts competitions for students related to STEM challenges. The organisers of this event are Guangxi S&T Museum, Guangxi Normal University, and Children & Youth Science Center of CAST, which has collaborated with SEAMEO QITEP in Science as the local host and event coordinator in Indonesia since 2017.



On 12 October 2022, Seaqis has Successfully Held the 5th International Stem Study Contest (Issc).

The competition was held onsite at SEAQIS office to find the 1st winner for each level of competitions. There were three STEM competitions held by SEAQIS: water rocket, trebuchet, and paper bridge for two categories on each competition (junior and senior high school). Each category consists of three teams with one assistant teacher and 2-3 students. Therefore, a total of 18 teams participated in the competitions with a total of 70 participants.

As a result, Darul Hikam Integrated Secondary and Senior High Schools became the 1st winner of paper bridge competition in each level; SMP Darul Ulum 1 Peterongan Jombang turned out to be the 1st winner of water rocket competition for junior high school level; while Anni'mah Middle School and Darul Quran High School became the 1st winner of trebuchet competition in each level.



On 15 November 2022, the 5th International STEM Study Contest (ISSC) Entered the Final Round.

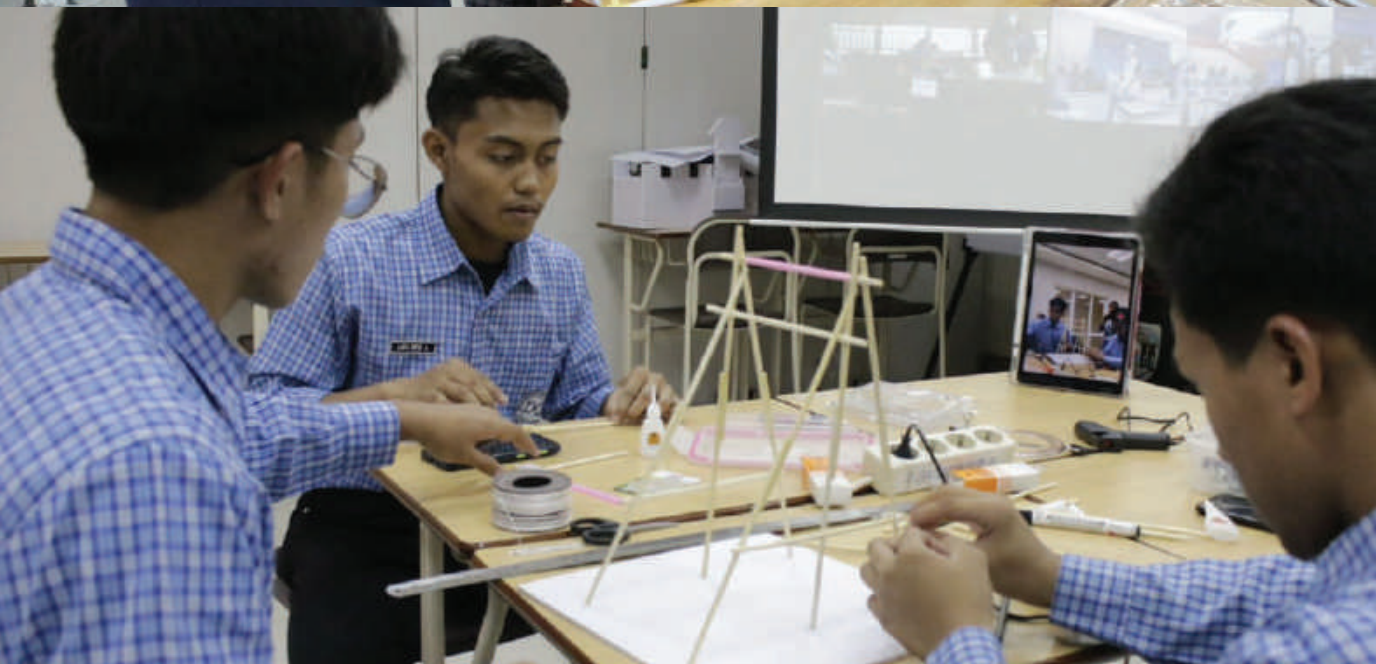
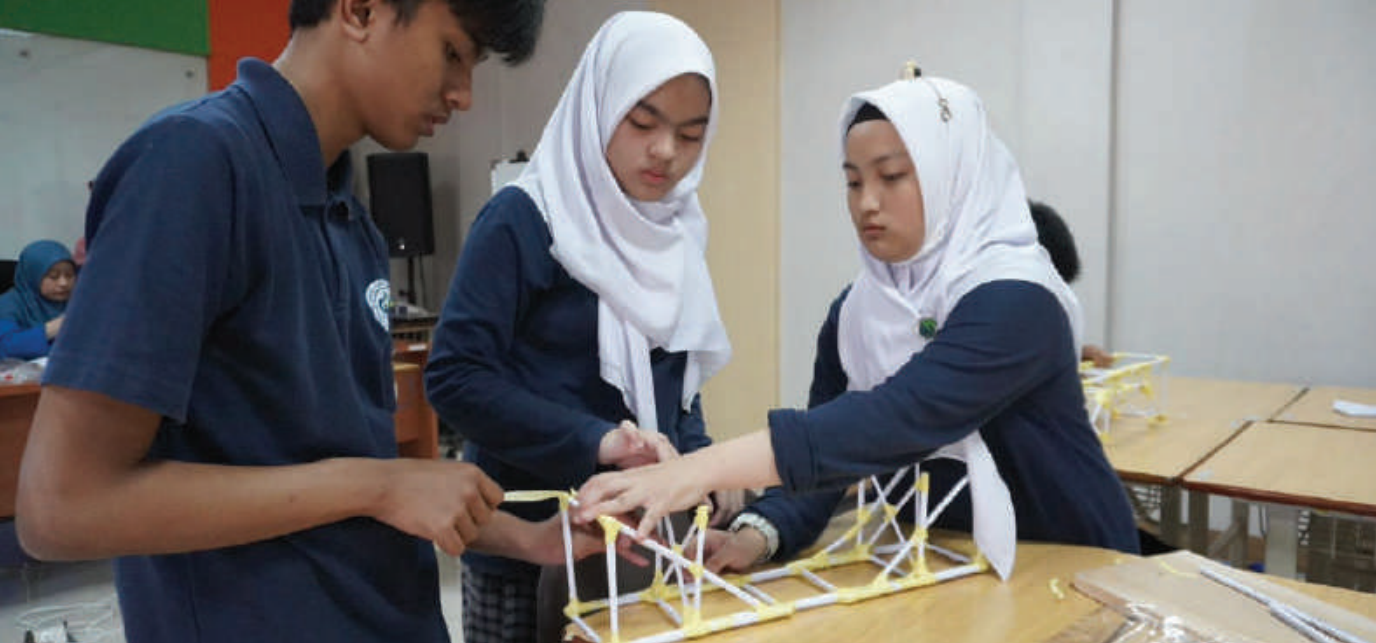
The competition was carried out in blended mode at 13.00-17.00 WIB. The offline mode (on-site) was held at SEAQIS office, while the online mode utilised an online meeting application with other countries. Several teams that become the representative of Indonesia to the final round are Darul Hikam International Middle School and Darul Hikam International High School for the paper bridge competition, Anni'mah Middle School and Darul Quran High School for the trebuchet competition, as well as SMP Darul Ulum 1 Peterongan Jombang and Sampoerna High School for the water rocket competition. These six teams have competed against several teams from other countries such as Thailand, Malaysia, Cambodia, Philippines, and China as the main host of this event.

At the end, the Indonesian teams obtained satisfying results. For the paper bridge competition, Darul Hikam International Middle School's model could carry out as much as 9 kg, while Darul Hikam International High School's model carried as much as 12 kg. From the trebuchet competition, Anni'mah Middle School team could drop seven pawns, while Darul Quran High School team dropped eight pawns. Meanwhile, from the water rocket competition, SMP Darul Ulum 1 Peterongan Jombang team was able to launch a rocket as far as 103.8 m while Sampoerna High School team launched 71.3 m away.



The results has been reported to the Chinese host committee by compiling and sorting all data and the winners has been announced by the Chinese committee. Finally, SMP Darul Ulum 1 Peterongan Jombang, the Indonesian Water Rocket team, achieved the highest range in launching a rocket and won first place. Congratulation!







More Than Adventure to North Kalimantan

From 16 to 18 January 2023, Dr Indrawati as SEAQIS Director was invited by PT PKN (Pesona Khatulistiwa Nusantara) to Tarakan City and Bulungan Regency to survey the school and environment around coal mine of PT PKN as one of the corporate social responsibility programmes in education field. The geographical condition of Tarakan City and Bulungan Regency which were separated by the sea and the river caused the survey trip became more challenging. Moreover, the students and teachers also had to put more effort to go to school because of the condition there.

There were several activities attended by Dr Indrawati during this visit. First of all, there was a Focus Group Discussion (FGD) with all vocational high school principals in the North Kalimantan at SMKN 2 Tarakan. In this occasion, Dr Indrawati stated that the vocational high schoolers could join in SEAQIS internship programme through the Golden Ticket scheme which provides an opportunity for them to be an intern as well as be a college student. The next activity was visiting the coal mine site and schools around the area. From this visit, Dr Indrawati recommended several alternatives on teacher coaching which could





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The signing of cooperation agreement was carried out by PT PKN with various stakeholders, including SEAQIS. Moreover, this is the first collaboration document for SEAQIS in 2023 and the MoU in education field was signed by Dr Indrawati and Mr Tria Suprajani as the Business Development and General Director of PT PKN. On the MoU signing ceremony, Mr Tria said, "What is stated in the MoU should be implemented so that we can contribute more to the environment as in line with our vision and missions."

This programme was also supported and appreciated by the local government as Mr Erin Wiranda (Assistant II of Bulungan's Development and Economy Fields) came to represent the Bulungan Regent. He stated that the children in Bulungan should not only be spectators, but they must be competitive and innovate to contribute in developing Bulungan, North Kalimantan, as well as Indonesia.



DID YOU KNOW ABOUT NUATAN?

A few weeks ago, Indonesia was put on the social media spotlight for being on the top three countries with the most plastic waste in the world. Obviously it's not a prideful achievement for us. Plastic waste is the longest standing, serious problem not only for Indonesia, but the world.

A lot of researchers have started to find an alternative for plastics using a more environmentally-friendly materials. Some of them are Vlasta Kubušová and Miroslav Kral, they work with the Slovak University of Technology in Slovakia, establishing a studio and managed to create a bioplastic material called NUATAN.

NUATAN is a new generation bioplastic, based on a biotechnology with 100% renewable raw material like corn, wheat flour, and used cooking oils. Basically, NUATAN bioplastics came from a mix of two biopolymers: Polylactide (PLA) coming from corn starch, and Polyhydroxy butyrate (PHB) coming from corn starches that are metabolized by microorganisms. These materials are pliable through various production methods, from injection moulding to 3D printing.

Although made from bioplastic, NUATAN is not only used to make single-use products, but also products that have a longer life time, up to 15 years. It can sustain temperatures up to 100 degrees Celsius, and is very safe for both human and animal consumption. Interesting, isn't it? No wonder NUATAN managed to get a lot of achievement for its acts of pursuing change, and helped the world tackling the plastic problem. We might as well pivot to bioplastics like NUATAN for a better Indonesia and a better world.



Source : *Nuatan - MaterialDistrict*
Home | Nuatan
Home | Crafting Plastics

A Cloud Can Weigh 1.1 Million Pounds

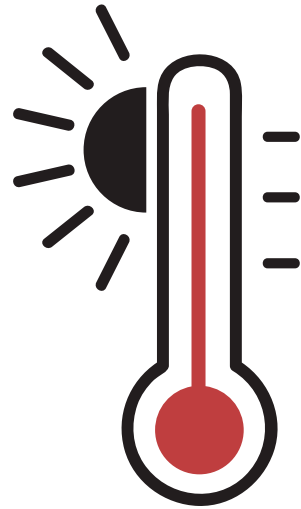
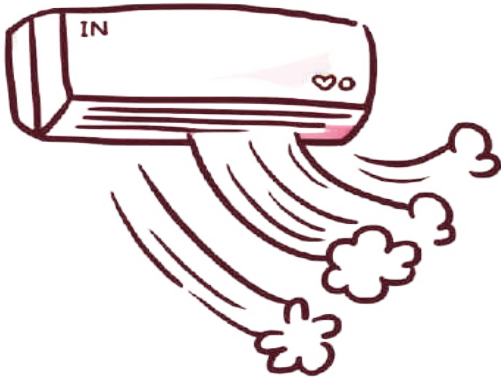
Do you ever wonder how heavy the clouds you see floating around the sky every time you take a walk on Sunday morning? One of the researchers from The National Center for Atmospheric Research has found a way to measure the weight of a cloud by measuring the water density from one of the types of cumulus clouds. The cumulus clouds were estimated to have weigh about half a gram per square metre. After that, the researcher measured the size of a cloud's shadows when the sun's rays fell on top of it with an odometer, which is a tool to measure mileage on vehicles. The method is circling around the shadow of the cloud using a car. The result is that cumulus clouds usually have a cube shape, and the size is estimated at 1 million cubic metre. By knowing the density and volume of the cumulus clouds, we also know how much water it contains, that is 500,000,000 grams or about 1.1 million pounds of water. With such a large size and weight, how do clouds fly in the sky? The clouds have particles that are not concentrated in one place and spread into countless minuscule drops of water. Clouds also have a lower density level than dry air, making it easy to float.

Source:

<https://www.studiobelajar.com/seberapa-berat-kah-awan-itu/>

Pictures:

<https://www.pngegg.com/id/png-bzbni/download>



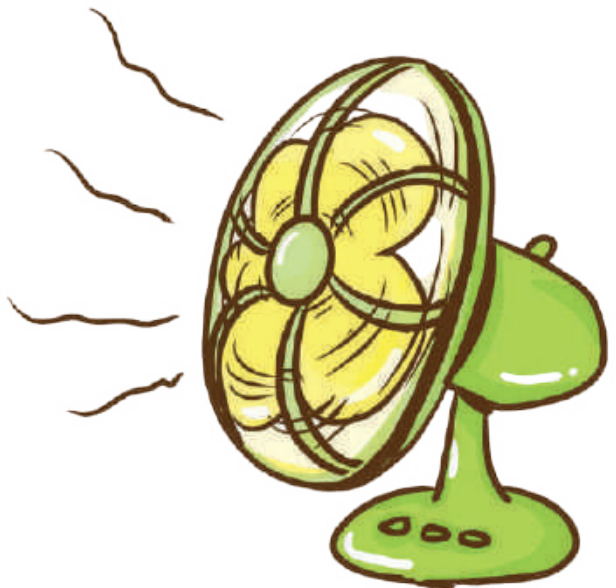
Electric Fans Cannot Reduce the Temperature

Did you know that the electric fan we use in the scorching summer heat doesn't actually lower the temperature?

You might wonder, "Why not? Doesn't blowing air make us feel cooler?" It's true that the fan can make us feel cooler, but it's only a surface phenomenon. Temperature measures the heat of an object, and when the air temperature is higher than our body temperature, we feel hot. The electric fan doesn't actually lower the temperature of the air. Instead, it simply circulates the surrounding air, accelerating the heat exchange between us and the air. As a result, the water on our skin surface evaporates faster, making us feel cooler. In other words, the electric fan just blows the hot air away from us, instead of actually lowering the room temperature.

In an experiment, researchers placed an electric fan and an air conditioner in two different rooms. They found that the air conditioner could lower the room temperature to below 25 degrees Celsius, while the electric fan could only lower the indoor temperature by 1 to 2 degrees

mean that the electric fan is useless. In hot summer weather, the electric fan can still help us feel cool, increase air circulation, speed up evaporation, and relieve the discomfort caused by heatwaves. Using an electric fan can also reduce the frequency of air conditioning use, saving electricity and energy. Additionally, the electric fan can help us keep mosquitoes away, making the indoor environment cleaner.



Source:
<https://www.scwdwl.com/news/187511.html>

Pictures:
<https://image.baidu.com>
<https://www.freepik.com>



Infrastructure Development and Analysis of STEM Principles in Jakarta-Bandung High-Speed Train Construction

by the Team of Darul Ulum 2 Senior High School BPPT Jombang

In every country, infrastructure development is needed to support human activities, so that the people of that country can create a productive economic cycle. Indonesia also does this, collaborating with China to make a new breakthrough in the world of modern transportation, namely the Jakarta-Bandung High-Speed Rail (HSR) development project.

This collaboration has been carried out since 2015 and after completing construction, it will soon be operated in mid-2023. It should be noted that this high-speed train project is the first in Southeast Asia. Therefore, the Indonesian government is opened for an extensive cooperation with China, not only to improve brotherly relations, but also to increase economic activities in Indonesia.

The construction of the Jakarta-Bandung high-speed train cannot be separated from the application of STEM (Science, Technology, Engineering, and Mathematics). This can

also be used as a learning medium for students in order to not only obtain theoretical material at school, but also practise it in the real world. This kind of practical knowledge makes room for a more comprehensive and dynamic learning, which is the aim of the Indonesian education curriculum: “Merdeka Belajar”.

High-Speed Railway Construction

After making a deal of agreement between the two countries, the construction of KCJB (Kereta Cepat Jakarta-Bandung/Jakarta-Bandung High-Speed Railway) was immediately carried out massively, as evidenced by the construction of a casting yard¹ for the girder² production process as a promoter for the construction of an 80-kilometerelevated structure—one of the routes KCJB will pass. In addition, contractors and architects were brought together to design plans for both the station and the high-speed railway.

The remainder of this railway consists of 13 tunnels and subgrades. To produce optimum quality concrete, there are also additional construction in the form of batching plant³. The girder transport machines were also deployed to shorten the girder installation time on the elevated structure used as the KCJB railway.

The tropical rainforest climate of Indonesia makes the soil structure not sturdy. Because of that, there are lots of earthquakes and liquefaction or landslides, especially in the Bandung area, where the average soil moisture is higher. This situation made the contractors use tricks: the rails passing through areas with moist soil are given lots of rocks, so that the strength of the soil is also stronger in supporting the train. However, the prevailing speed (100 km/hour) cannot be as fast as on a soiled track because at high speed (350 km/hour), rocks will be thrown off the rails and scattered everywhere.

Judging from the quality of the materials used in making the high-speed rail, it is also different from the trains that have been operating in Indonesia. This rail is imported directly from China with the base material being platinum or the strongest metal. This aims to make the track as straight as possible, in the sense that this metal is immune to the scorching heat of the sun, and therefore, it does not shrink or expand easily—two conditions that are very dangerous when it occurs to rail. A crooked rail will make the train unbalanced while traveling at a high speed or worse, it might cause an accident.

TOD (Transit Oriented Development)

Basically the development of KCJB is designed with various integrated facilities that have the potential to support economic life around the construction of the KCJB line, especially focused on building a four-station infrastructure which will become KCJB transit facilities. This development has a TOD (Transit Oriented Development) system where the main purpose of establishing a development center around the station is solely used to create a new economic

cycle and provide great opportunities to carry out an economic activity.

According to the plan, this construction will be carried out at three specific points which are certainly close to the stop stations that KCJB passes through. The three points are Halim Superblock, Kotawana, and Telaga Luar. The infrastructure provided by the government is in the form of apartments, hotels, malls, offices, and so on. However, this does not rule out the possibility for the community to create businesses around the infrastructure center. In this case, the government really appreciates the realization of economic activity as a place to fulfill the needs of the people around the place.

Energy Supply on Trains

With the EMU (Electric Multiple Unit) system, the energy used is electricity. Trains are energised at certain points on the KCJB line, especially at stations where the train transits. The charging system uses the principle of an electric field that occurs between two poles approaching each other. One pole is located on a vertical cable with electricity from the National Electricity Company (Perusahaan Listrik Negara/PLN). The second pole is located on the roof of the train in the form of a small device that is a good conductor or conductor of electricity.

The electricity received from the first pole will be stored as an energy reserve and will be used when the train operates on the energy box specifications. The received electrical energy is used to generate all the equipment in KCJB, especially in powering the train engine center which is connected online with the engine controller located near Tegalluar Station. Consequently, the function of the machinist in terms of train operations is only to control the engine and passengers.

Vibration Resistance and Wheel Qualification

CREC (China Railway Group Limited), the contractor acting as the executor of the construction, also thought about the condi-

tion of the passengers when the train was moving at a very high speed. In this case, CREC uses cabin noise system that can dampen all vibrations that the train goes through so that it is not felt by passengers. This is in accordance with the principles of physics which reveal that vibrations can be damped by objects that have elasticity. Of course, the cabin noise system should be composed of high-elastic material because it is very likely that it will experience vibrations.

The appearance of the wheels on KCJB is also different from the trains operating in Indonesia. The wheel material used is smoother but heavier, and the wheel surface is arranged roughly which is used when stopping at the station. This kind of wheels support the train to run at high speeds.

Security System

The first security system is the Lightning Protection System (LPS) in the form of Lightning Wire to protect KCJB's electricity which is supplied via overhead electricity or the Overhead Catenary System (OCS). The method applied to the external LPS is by installing an air terminal which functions to catch lightning and down-conductor grounding which is capable of properly flowing electricity from lightning strikes from the top of the building to the ground. As for the internal LPS, it is equipped with shielding for electrical induction needs, arresters for conduction, and bonding for voltage elevation.

Regarding the threat of an earthquake, seven sensors (Dispatching Monitoring Centers) have been installed along the KCJB construction, each of which has a coverage area of 25 km and functions as an earthquake detector. Related to the influence of foreign objects, six sensors are also installed in each overpass. This foreign object protection system will also be equipped with a net to avoid objects falling into the KCJB track from above the bridge. All communications will be supported through GSM-R communication technology which is centralised in the

control management system building, and there will be also some CCTVs at certain points.

Apart from having a security system capable of preventing hazards, KCJB is also equipped with various preparations for mitigation in the event of a threat that endangers the operation, starting from the backup power supply to the evacuation strategy.

With the construction of the Jakarta-Bandung high-speed train, it is hoped that it will be part of the means to establish good bilateral relations between Indonesia-China, so that it is expected to have a positive impact, especially in the field of transfer of STEM knowledge to improve the quality of human resource. In a sense, this can create a practise-based Indonesian education curriculum in the field, so the students will not only be qualified in terms of theory, but can also apply them in everyday life.

The construction of this train is based on EMU so that it produces less carbon emissions than other transportation, namely 4%. This has been appreciated by activists working in the climate field because the existence of modern transportation does not always mean it damages the environment, but it can also be beneficial for the people of Indonesia. In addition, the KCJB construction project can become a part of means of developing Indonesia's infrastructure with the aim of having a positive correlation with the productivity of the Indonesian people's economic activities. If this economic activity is well developed, then the percentage of unemployment in Indonesia will decrease compared to the previous year.

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A Teacher's Passion

“Money is not all that matters...it's all about appreciation called LOVE”.

Teaching is the profession I loved most. It is where I had learned a lot of things; to appreciate small people and to treasure those simple things around me. This is where I learned to know God.

I am Sheylah Montereal. I was born into a wealthy family where I am the only child of a very well-known business couple, Mr. and Mrs. Ronaldo Montereal. They gave me everything that I wanted. Since I was young, they used to provide everything I asked for: expensive toys, branded bags and clothes, boxes of jewellery and accessories, delicious foods, and branded perfumes. I was living a luxurious life where I had no worries about money. I thought that time, money is my world. This mindset caused me to grow up with the insight “Money makes the world go round” and without money, my life wouldn't be complete..

My life in school was not that perfect, especially in my elementary grades. Yes, my parents sent me to a good school, but I learned nothing. I never listened to my teachers, therefore I really don't care about my studies. At first, I thought how lucky I am to have all that wealth, but I was wrong. I tried to catch my parent's attention but none of them had the time to sit with me and help me with my assignment. They were both busy running their business, for it is very clear that money is all that matters for them.

Every morning I woke up from my bed and my nanny was the one who took care of everything that I needed. My parents don't even bother to check me inside my room. They don't even bother to ask, “Are you okay, Sheylah?” Deep down, I craved their attention, their love, but it seems they couldn't give me any. My elementary life was full of rebellion, hatred, and pain. Until such time that I entered secondary school. My life totally changed when I met Ms. Sally, my teacher in science. During our everyday class with

her, everybody was participating in the discussion except me. I really don't care what she's talking about. I just kept myself quiet in the corner of the room while scribbling about “All I need is love...not money”. This way, I could freely express my emotions and feelings. Until our recess time came, the bell rang, and all my classmates hurriedly rushed to the canteen to buy some snacks. I was left inside the room alone with Ms. Sally. I stared at her for a while and then continued to write again. I knew that she had a lot of questions in her mind about why I'm behaving so strangely. A couple of minutes later, Ms. Sally approached me and asked, “Are you okay, Sheylah?” I looked at her as tears started to fall, that was the first time somebody asked me if I'm okay or not. She offered a piece of tissue and tried to wipe off my tears. I didn't utter a single word, but I knew Ms. Sally could read my mind that I was deeply longing for someone to talk to. Yes, I had a lot of friends, but we were experiencing the same stigma.

I silently handed my unfinished scribble. She read the first few lines, then she wrapped her arms around me and whispered “Ssshhh! Sheylah, you are so blessed to have them as your parents. Maybe, today, you can't understand what they are doing especially at a young age, but I know one day, you will realise the importance of why all these things were meant to happen. You're a bright girl, Sheylah. Just try to open your mind and think that God has a reason for everything. HE loves you my dear. HE really loves you!” I've been touched and cried a lot. My heart was filled with joy that time. All those negative feelings against my parents were totally gone. From that moment, Ms. Sally and I became good friends.

She kept that scribble and signed me up to one of our school clubs. She believed that I had the potential in writing since she figured

that I could make the best literary work for the school paper and her intuition never failed. With the help and support of Ms. Sally, I became the 3rd editor-in-chief of the school paper. She inspired me a lot through those years that I felt my world was falling apart, moreover she helped me grow into a better individual.

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Years passed by until my college graduation day came where I'm going to receive my diploma and my medal as Summa Cum-Laude in our year. I've done an excellent job in my academics and co-curricular activities and it's all thanks to Ms. Sally. My parents turned out to be very supportive of me and they were grateful for all Ms. Sally's aid for me. On the very day of my graduation, Ms. Sally's mother visited me after the graduation rites. She handed me a small card and a DVD. I felt very strange as I opened the card and started to read the message. Suddenly, my eyes couldn't help but to cry. I hugged her as I said, "I will truly miss Ms. Sally". Tears fell like rain at that moment for the fact that Ms. Sally had just passed away one day before my graduation.

After that very moment, my dad drove the car to go to Ms. Sally's funeral. As we arrived, I rushed to her coffin and cried. "Teacher, thanks for everything. I will always remember all the things you've taught me". Her mother tapped my shoulder and whispered "Sheylah, Sally doesn't want you to cry. Don't shed a tear on her because she's now with the Lord". After a couple of minutes, we watched the DVD that she made five days before her last breath. The message went like this:

"Happy Graduation Day, Sheylah! I'm very glad that you've already reached one of your dreams. I'm so thankful for our meeting. You have inspired me especially in my teaching career and as you'll become the next generation of teachers, I hope that you will help your students to dwell with their strength and skills, to motivate them in a way that you can bring out the best within them, to be a blessing to your students, to remember

always that God loves you and everything happened for a reason. I love you very much, Sheylah. May the good Lord always bless you and your family."

As we finished the video, we saw a compilation of my achievements during my secondary school days with her. Everybody at the funeral shed a tear knowing that Ms. Sally was really an inspiration to everyone..

The End

Short story written by:

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A New Paradigm in Education Supervision: Professional Learning Community (PLC) in Education

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One important event in the Training Course on Science Classroom Supervision by SEAMEO QITEP in Science which was held from 24 October to 02 November 2022 is Professional Learning Community (PLC). This article will explain about PLC, a new paradigm in education supervision.

The PLC is a new direction in the practice of educational supervision. The results of learning supervision not only provide teachers with recommendations to improve their learning, but also lead them to the establishment of PLC at school. The school principal should be the initiator of the PLC establishment at school, while the school supervisor carries out various supervision strategies to help the principal in establishing PLC.

Professional learning communities were further defined as a group of committed educators working collaboratively in an ongoing process resulting in better student achievement. According to DuFour (2004), the term professional learning community has often been used to describe every conceivable alliance of individuals with a common interest in education, such as a grade-level teaching team, a school committee, a high school department, an entire school district, a state department of education, or even a national professional organization. However, DuFour noted in the creation of an authentic professional learning community, the concentrated focus is more on learning than on teaching, and he emphasized that collaboration and accountability are the keys to successful PLC. Therefore, many professionals such as teachers, staff, and principals are committed to collaborate in a learning process to improve the

quality of learning in the classroom.

In the literature on teacher professional learning, many conditions of the school context are described, such as the time scheduled for professional learning, proximity to colleagues' workspaces and collegial availability and support, quality of support, guidance and supervision of learning processes, accessibility of resources and support, monitoring and evaluation on teacher professional learning at school level, management support, and educational leadership. Thus, Professional Learning Communities (PLCs) are part of an effective ongoing professional development mechanism that can affect teaching practice, and in turn, students' learning. The bond of this community is the shared values, views, beliefs, hopes, and goals.

There are three big ideas and core values of PLC according to Richard DuFour.

The first is ensuring that students learn. The school ensures that students are not only taught, but also learnt, guaranteeing learning for all. . Thus, the focus of the school has changed from teaching teachers to learning students. As a result, teachers in PLC ask the following three questions: What do we want each student to learn? How will we know when each student has learnt it? And how will we respond when a student experiences difficulty in learning?

The second is culture of collaboration. It means that educators who build professional learning communities recognize that they must work together to achieve the collective goal of learning for all.

The third is focusing on results. Focusing on results mean that professional learning

communities judge their effectiveness on the basis of results. The professionals who work together to improve students' achievement is the routine of everyone at school.

There are three types of Professional Learning Development such as lesson study, teacher-peer guidance (peer coaching), and learning walks.

The steps taken in the lesson study are as follows: (1) setting goals; (2) planning; (3) observing; (4) debriefing and revising; (5) repeating step 3 & 4 (optional); (6) reflecting and sharing. Suggestions that need to be considered for implementing this

type are: there is no one right step in the lesson study, the design can be flexible depending on the purposes, and lesson study can be used in different contexts.

The steps of teacher-peer guidance (peer coaching) are as follows: (1) preparation, explaining to the teachers that we want to coach —observing other teachers (watching and learning)—; (2) effect (talking, discussing, and sharing experience); (3) result (receive feedback; if positive, it can continue, but if negative, it must be stopped). The suggestions to implement this type are: you need to be flexible, creative, and aware that teaching is an art. Additionally, watching and observing other teachers can give you more experiences and knowledge.

The last type of professional learning is learning walks. The steps to implement learning walks are as follows: (1) orientation of the learning walk team (Learning walk orientation); (2) classroom visit with note taking on observation forms; (3) individual reflection (reviewing observation notes and completing learning walk reflection sheet); (4) reflection sharing of learning walks team members. In learning walks, the team must be clear with defining the goal of learning walks, observing what is happening in the class, and realising many benefits in learning walks.

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Interactive E-books as Learning Resources



Sharon M. Ananayo

San Antonio Integrated School

The emergence of Coronavirus Disease 2019 (COVID-19) has greatly affected the normal operations of the education sector since physical distancing has become a requirement. The pandemic has caused the suspension of face-to-face teaching and learning activities between teachers and students at school. However, The DepEd (Department of Education) Chief, Leonor Magtolis-Briones emphasised that the education process must be continued. Hence, she introduced the Basic Education Learning Continuity Plan (BE-LCP) as the department's response to the challenges posed by COVID-19. Under the BE-LCP, the K-12 Curriculum was simplified into the Most Essential Learning Competencies (MELCs) by reducing the number of learning competencies by approximately 60%. In addition, a series of webinars and training were conducted for teachers and the principal, parents and guardians were oriented, multiple learning delivery modalities were deployed, and contextualised learning resources were prepared for distance education.

The education system that shifts from face-to-face activities towards distance education has resulted in the most use of gadgets, such as mobile phones and other devices which aim to become a medium in this whole education process. Since mobile phones have evolved from simple-call-and-text use to web browsing, instant communication via virtual platforms, and office tools such as word processing, it has also become useful as a part of student-learning activities. For instance, mobile phones enable students to access educational materials anytime and anywhere. However, the capabilities and use of mobile phones could still be maximised for optimum learning outcomes. The maximisation was using interactive e-books, for example. E-books are digitised textbooks that can be accessed by android/smartphones or tablets through e-books app reader, such as Kotobee reader. The good thing about this e-book reader is how easy it is for students to navigate the e-books with no internet connections and also can be

accessed anytime and anywhere. E-books are embedded with multimedia such as text with images, links to further descriptions or definitions, audios and videos for students to play and replay, and interactive quizzes and activities to evaluate student progress while making the quiz fun and entertaining. Students could immediately check their scores and could always retake the quiz if they get low scores. Further, since the e-books can be shared digitally, hence the fear of coronavirus transmission could be eliminated.

The e-books are composed of different sections, the introductory section being the first part. This section provides students with a brief overview of the major topic covered by the most essential learning competency. This section also enumerates all the steps in accessing the material. The pre-assessment section provides interactive activities to assess students' prior knowledge and experiences about the learning competency.

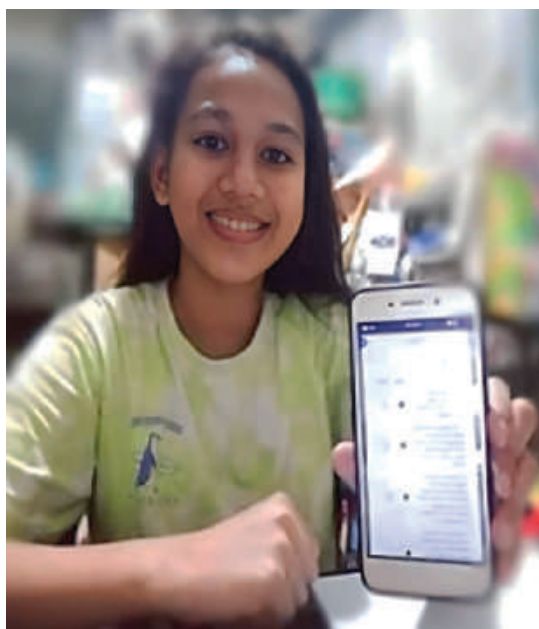
The lesson section provides different activities to enrich students' knowledge and develop their high order thinking skills. This section covers different subsections, namely, "Let's Try This", "Let's Study", "Let's Watch This", "Let's Remember", "Let's Listen to This", and "Let's See What You Have Learned". "Let's Try This" includes interactive activities for students to carry out.

"Let's Study" includes background information about the topic through text with

images and links for new words or phrases. "Let's Watch This" includes videos that aim to deepen students' understanding. "Let's Remember" is the generalisation part of the lesson through an interactive activity. "Let's Listen to This" provides students with audio they can listen to. "Let's See What You Have Learned" provides students with an interactive quiz as a form of formative assessment. The Reference Section enumerates all the sources of information, including copied images and videos to avoid copyright issues.

The effectiveness of e-book utilisation in mastering learning competencies was tested through research that was conducted during the school year of 2021-2022. Results of the study showed that the use of e-books has a significant impact on students' learning as it has increased the scores of the students in Science 8 class. The improvement in the mastery level of the students could be attributed to the positive views and feedback of the students on the interactive e-books. The students strongly agreed that they were satisfied with the use of e-books as a tool for learning. They also strongly agreed that the e-books were very useful and informative, enjoyable to use, attractive, easy to navigate, and lessons were easy to understand through the texts, audios, videos, and interactive activities.

Since the latest research showed positive results as to the use of e-books on the academic performance of the students, e-books were also developed and utilised in Science 9 class and TLE (Technology and Livelihood Education) classes. This school year (2022-2023), whereas face-to-face classes have already resumed, the e-books that were developed and used during the pandemic were utilised as supplementary instructional materials and have made classroom learning more fun. The e-books were also adopted by different teachers within and outside Region 2 and were used in their classes. Further, the developed e-books were also distributed to uneducated youths to help them keep up with Science lessons



Movie Review

FROM ACADEMY AWARD® WINNING DIRECTOR **RON HOWARD**

VIGGO MORTENSEN **COLIN FARRELL**

THIRTEEN LIVES

BASED ON THE TRUE STORY OF THE WORLD'S
GREATEST RESCUE MISSION



METRO GOLDWYN MAXYER PICTURES PRESENTS IN ASSOCIATION WITH BRUN CREATIVE AN IMAGINE ENTERTAINMENT / STORYTELLER / MAGNOLIA NAE PRODUCTION A RON HOWARD FILM "THIRTEEN LIVES"
JOEL EDGERTON, TOM BATEMAN MUSIC BY BENJAMIN WALLFISCH COSTUME DESIGNER JAMES D. WILCOX, A.C.E. PRODUCTION DESIGNER MOLLY HUGHES EDITOR JASON MUKDEEPROM
EXECUTIVE PRODUCERS JON KUYPER CAROLYN MARKS BLACKWOOD MARIE SAVARE MICHAEL LESSLIE AARON L. GILBERT JASON CLOTH
PRODUCED BY P.J. VAN SANDWIJK, P.G.A. GABRIELLE TANA, P.G.A. KAREN LUNDER, P.G.A. WILLIAM M. CONNOR BRIAN GRAZER, P.G.A. RON HOWARD, P.G.A.

STORY BY **DON MACPHERSON** AND **WILLIAM NICHOLSON** SCREENPLAY BY **WILLIAM NICHOLSON** DIRECTED BY **RON HOWARD**

The Thirteen Lives

Directed by : Ron Howard
Writers : William Nicholson, Don MacPherson
Starring : Viggo Mortensen, Colin Farrel, Joel Edgerton
Genre : Action, Biography, Drama, Thriller
Release Date : August 5, 2022
Duration : 2 hours 27 minutes

The biographical film *Thirteen Lives*, based on true history, depicts the thrilling and touching process to save a group of boys trapped in a cave in Thailand. On an ordinary day during the summer of 2018, the soccer team, which consists of 12 boys and their soccer coach, went on an adventure into the mysterious Tham Luang cave for fun. Unexpectedly, the sudden rainstorm flooded the tunnel of the cave and trapped the whole soccer team inside. An international crew of volunteers thus carried out a series of actions, attempting to rescue the thirteen lives.

Already breathtaking as the true story is, the film dramatizes the course of the rescue by the absorbing depiction of the underwater terror which would overwhelm the audience by the narrowness and tranquility. Ceaselessly appearing conundrums also exert the tension that the rescue team once faced on the viewers, giving an intense watching experience.

At the same time, the film shows excellence on tugging at the viewers' heartstrings. The story was told from perspectives of different groups of people, including the families of the 13 boys, the volunteers from all over the world, and the trapped. Chances are that you may be touched by the anxious feelings of the parents outside the cave, the sacrificial spirits of the volunteers and the fortitude of the boys. There is definitely a scene in this film which would strike you and affect you.

This film successfully records a great rescue, a victory that should not be forgotten. As the director Howard once said that, "This was a victory for the Thai people and the Thai government, and as a result, they're very, very proud of it. They should be. They never took their foot off the gas and did everything they could, as a culture, as a government, physically, emotionally, spiritually to make this rescue happen."

picture source: https://www.imdb.com/title/tt12262116/?ref_=tt_mv_close

c u n k
on
e a r t h



Cunk on Earth

Duration : 5 Episodes, 29 minutes each
Released : 2023 (Netflix)
Directed by : Charlie Brooker, Christian Watt
Starring : Diane Morgan



DISCLAIMER may or may not contain some spoiler

“Which was more culturally significant, The Renaissance, or Single Ladies by Beyonce?” A question so great that it makes everyone questioned the significance of every event in humanity. How can a TV series combine scientific documentary with comedy, but still be insightful? Cunk on Earth takes us down series of significant events throughout humanity from prehistory to present day. These episodes talk about how humankind emerged, debated about faith and religion, created machines, and advancing technology, even goes into war with each other—the Gen Z way.

Lead by Philomena Cunk (Diane Morgan), this show invites actual experts to tune in to the discussion and give their two-cents on questions like “was Jesus the first celebrity victim of cancel culture?.” The best part, is the fact that this show takes its viewers to casually spend almost 30 minutes (more if you are binging) of your time to study various topics of humanity; something even your professors are struggling to do.

Although more focused on comedy, Cunk on Earth still manages to give its viewers a great deal of insight on humanities and its significant events without making them fry all their brain cells out, mainly because of the way it is scripted—even Charlie Brooker, the Executive Director of this show, specifically told the experts to treat every questions as if they are coming from a child. The colloquial and irreverent nature of this show obviously make it less credible relative of other documentaries in the market, but then again, it’s comedy, it is literally a laughing stock.

All five episodes of Cunk on Earth is available on Netflix. If you loved Philomena, you might want to see her in other “Cunk on...” series and it’s quite a guarantee that you’ll love them too.

Reference:
www.youtube.com
www.netflix.com

The Dim Sum

Dim sum is a type of Chinese cuisine that has become popular all over the world. The word “dim sum” literally means “touch the heart” in Cantonese, and the dishes are typically small, bite-sized portions that are meant to be shared among a group of people. Dim sum is usually served in bamboo steamers, which help to keep the food warm and fresh. In this article, we will explore the science behind dim sum, including its history, ingredients, cooking techniques, health benefits, and popular types.

01 History of Dim Sum

The origins of dim sum can be traced back to the tea houses of ancient China. These tea houses were popular gathering places where people would come to socialize and enjoy a cup of tea. As the popularity of these tea houses grew, so did the demand for food. This led to the creation of small, bite-sized snacks that could be easily shared among groups of people. Over time, these snacks became more elaborate, and eventually evolved into the dim sum that we know today.

02 The Ingredients Used in Dim Sum

The ingredients used in dim sum vary depending on the type of dish. However, there are some common ingredients that are used in many different types of dim sum. These include:

Flour: Flour is used to make the dough for dumplings and other types of dim sum.

Rice: Rice is used to make the wrappers for rice dumplings and rice noodles.

Meat: Pork is the most commonly used meat in dim sum, but other meats like chicken, beef, and seafood can also be used.

Vegetables: Many types of dim sum contain vegetables like cabbage, carrots, and mushrooms.

Soy sauce: Soy sauce is a common ingredient used in many dim sum dishes to add flavor.

03 Cooking Techniques Used in Dim Sum

There are several different cooking techniques that are used in the preparation of dim sum. These include:

Steaming: Steaming is the most common cooking technique used in dim sum. Most dim sum dishes are steamed in bamboo steamers, which help to keep the food warm and fresh.

Boiling: Boiling is used to cook rice dumplings and other types of dumplings.

Frying: Frying is used to cook crispy dishes like fried shrimp balls and fried sesame balls.

Baking: Baking is used to cook sweet dim sum dishes like egg custard tarts and pineapple buns.

04 Health Benefits of Dim Sum

Dim sum can be a healthy addition to your diet, as long as you choose the right dishes. Many dim sum dishes contain vegetables and lean proteins like chicken and seafood. However, there are also many fried and greasy dishes that should be eaten in moderation. Here are some health benefits of dim sum:

Fiber: Many dim sum dishes contain vegetables, which are a great source of fiber.

Protein: Lean proteins like chicken and seafood are commonly used in dim sum dishes.

Antioxidants: Some dim sum dishes contain ingredients like green tea, which is high in antioxidants.

05 Popular Types of Dim Sum

There are many different types of dim sum, each with its own unique flavor and texture. Here are some of the most popular types of dim sum:

Har gow: Har gow are steamed dumplings that are filled with shrimp.

Siu mai: Siu mai are steamed dumplings that are filled with beef/chicken/pork and mushrooms.

BBQ buns: BBQ pork buns are steamed buns that are filled with BBQ beef/chicken/pork.

Fried shrimp balls: Fried shrimp balls are balls of minced shrimp that are coated in breadcrumbs and deep-fried.

Char siu bao: Char siu bao are steamed buns that are filled with char siu, a type of Chinese BBQ pork.

Turnip cakes: Turnip cakes are made by steaming grated turnips and rice flour, and then pan-frying them.

Sesame balls: Sesame balls are fried dough balls that are coated in sesame seeds and filled with sweet bean paste.

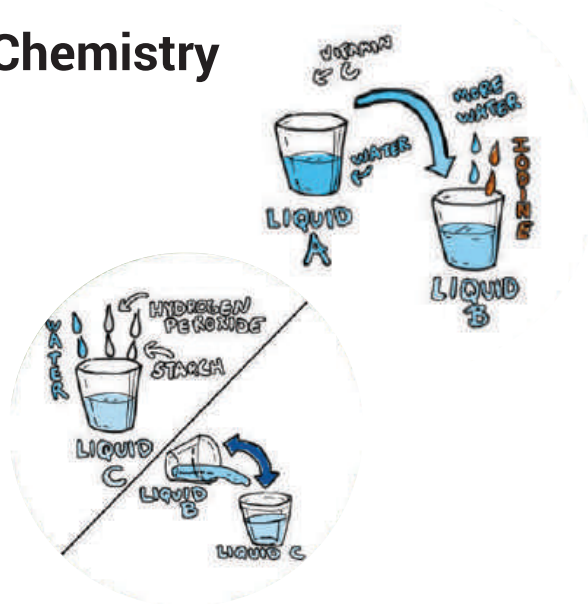
Dim sum is a delicious and popular type of Chinese cuisine that has become popular all over the world. The bite-sized portions make it ideal for sharing with friends and family, and the variety of dishes ensures that there is something for everyone. The ingredients and cooking techniques used in dim sum vary depending on the type of dish, but many dishes contain healthy ingredients like vegetables and lean proteins. As with any type of cuisine, it is important to choose the right dishes in order to ensure that you are getting the health benefits without overindulging in unhealthy options. Whether you are a long-time fan of dim sum or are trying it for the first time, there is no denying that it is a delicious and fascinating type of cuisine that is worth exploring.



Rapid Colour-Changing Chemistry

Tools and Ingredients:

- 1000 mg Vitamin C tablet
- Tincture of iodine (2%)
- Hydrogen peroxide (3%)
- Liquid laundry starch
- Warm water
- 3 clear plastic cups (4 oz or larger)
- Safety goggles
- Measuring spoons (1 teaspoon and 1 tablespoon)
- Measuring cup
- Plastic bag



Steps:

1. Put on the safety goggles.
2. Place the 1000 mg Vitamin C tablet into a plastic bag and crush it using the back of a spoon. Make it as fine as possible.
3. Put all of the powder into the first cup along with 2 oz (6 ml) of warm water.
4. Stir for at least 30 seconds. Call this "Liquid A".
5. Put 1 teaspoon (5 ml) of iodine and 2 oz (6 ml) of warm water into the second cup.
6. Add 1 teaspoon (5 ml) of "Liquid A" into the second cup. Notice the brown iodine turning clear. Call this "Liquid B".
7. Put 1 tablespoon (15 ml) of hydrogen peroxide, ½ teaspoon (2.5 ml) of liquid starch, and 2 oz (6 ml) of warm water into the third cup. Call this "Liquid C".
8. Pour all of "Liquid B" into "Liquid C". Pour them back and forth between the two cups a few times.
9. Put the cups down and observe. After a few minutes, the liquid will become dark blue.

Experiment

To make this demonstration into a true experiment, try answering these questions:

1. Does the temperature of the water affect how quickly the liquids turn blue?
2. Does the amount of Vitamin C added (Liquid A) affect how fast the liquid turns blue?
3. Does stirring the liquids multiple times affect how fast the liquids turn blue?

The Explanation

This is a demonstration of a chemical reaction known as the Iodine Clock Reaction. It is called "clock" because you can modify the amount of time the liquids need to turn blue. The chemical process of this experiment is a little bit complicated, but it is basically a battle of chemistry between the starch, turning the iodine blue, and Vitamin C, keeping it from turning blue. However, the Vitamin C loses and, in the end, we get the blue liquid.

Source: <https://sciencebob.com/rapid-color-changing-https://sciencebob.com/rapid-color-changing-chemistry/g-chemistry/>

Spinning Paper Blimps Experiment

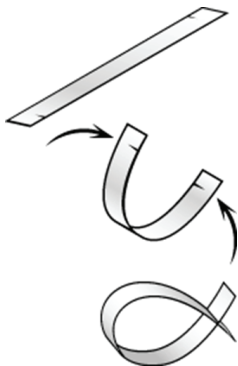


Tools and Materials:

- Printer paper
- A pair of scissors

Steps:

1. Cut a strip of paper lengthwise about one inch by 11 inches from a piece of printer paper.
2. Make two snips, one on either end of the strip.
3. Loop the paper over to then link those two snips together. Make it look like a fish or a blimp.
4. Stand on top of a chair or somewhere high and drop the paper.
5. Watch it spin to the ground! Determine the best way to drop your spinner to get the best results.



Explanation

Bernoulli's Principle is used to explain why things "fly" or have "lift". The curved shape of wings can alter the flow of air around it, causing it to move in different directions. When you craft this piece of paper wings this way, the force of lift continually acts upon it, causing it to spin. You will even notice it does not spin and fall straight down, it may fall outward or sometimes in big loops. The way you construct this will affect the way it falls.



Source:

<https://www.metrofamilymagazine.com/simple-science-experiment-spinning-paper-blimps/>

https://www.exploratorium.edu/science_explorer/spinning_blimps.html



SEAQIS Year-End Celebration

To celebrate the end of 2022, SEAQIS held several activities from 15 to 16 December 2022 such as an outbound for SEAQIS' employees, a programme evaluation meeting, and SEAQIS Employees Achievement Awards (SEA EAA). Those events are intended to appreciate, evaluate, and recharge the ideas and spirit of the employees.

On the first day, all the employees went to Situ Cileunca in Pangalengan, West Java. There were some capacity-building activities that should be done in groups. After that, they had a chance to try flying fox game and rafting. Although it was raining since the afternoon, they were still excited to follow all the outbound activities.

On the second day, an evaluation meeting was held in the morning to report all programmes that had been done in a year from each division and gave necessary feedbacks to be considered in planning next year's programmes. All the employees later on had to wear their most attractive 80s outfits because they would attend an award

called SEA EAA, conducted by Human Resources and General Affairs Division of SEAQIS. There were approximately 21 nominations in this award including "Employee of the Year". Fun games and gift exchange were also conducted in this year-end celebration.

All the employees were filled with joy, grateful hearts, and bursts of laughter during these two days. Some of the activities might be new experiences for them, but it turns out to be one of the most remarkable ones to close 2022.

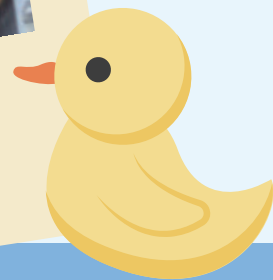


Our Little New Family Member

“Sons are the anchors of a mother’s life.”
Sophocles



Congratulation!



A new soul to cherish, a new child to love! On 31 October 2022, our hearts were overjoyed as we welcomed our new family member, **Keenan Malik Habrizi**. Thus Ms. Nurul Khosiyah, Treasurer of SEAQIS, has been a mother of two healthy children, she was blessed with another one! We wish nothing but a joyful life and pray for the baby boy to bring prosperity for his family and others as well.

Welcoming Interns in SEAQIS

The beginning of the first semester of 2023 left quiet an impression on SEAQIS for we have welcomed 15 college students to the SEAQIS Internship Programme. The interns consist of 10 Indonesian college students who get the chance to work on-site in the SEAQIS office from Magang dan Studi Independen Bersertifikat (MSIB) programme in Indonesia and five Chinese college students from on-site who get the opportunity to join an online internship. They are responsible to assist the process of drafting materials for publication, both printed and digital.

Here is the brief information of our interns:





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Dalian University of Technology



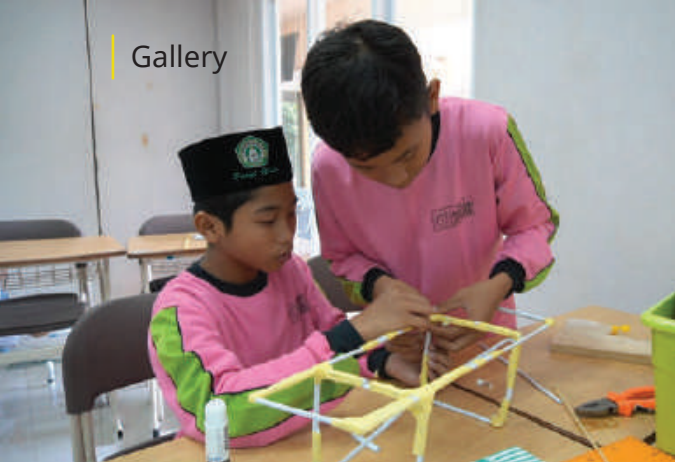
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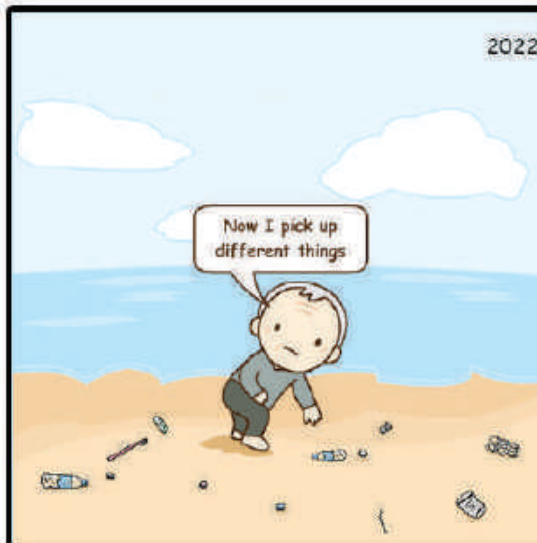
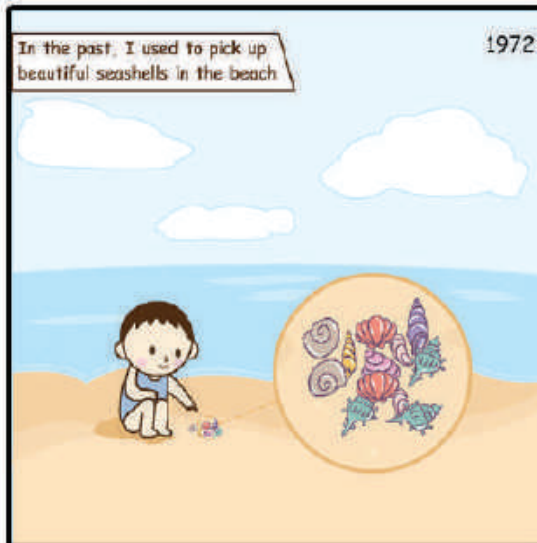
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"ACT ON CLIMATE CHANGE"



By Surya Arif Kartono, S.Pd., M.Pd.
Xin Zhong School Surabaya, East Java, Indonesia

3R by Surya Arif Kartono won 2nd place in TRIDECAFIESTA Comic Competition. The comic implicitly invites us to be aware about the 3R Program (Reuse, Reduce, Recycle) using a simple story of how our routine could get affected by the overpollution.