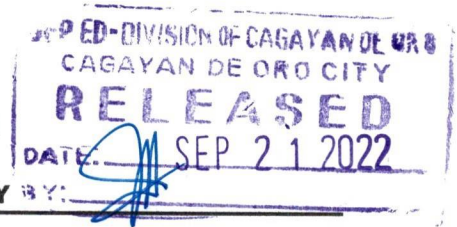




Republic of the Philippines  
**Department of Education**  
REGION X  
DIVISION OF CAGAYAN DE ORO CITY



Office of the Schools Division Superintendent

21 September 2022

OFFICE MEMORANDUM

No. 256 s.2022

To: Public Schools District Supervisor, North I  
Division Science Coordinator  
School Principal, Puntod National High School  
Concerned Science-Teacher Participants

**NXPLOERS WORKSHOP TO STEM STUDENTS OF  
PUNTOD NATIONAL HIGH SCHOOL**

1. Regarding the letter from Ms. Beverly Precious P. Berberabe, lead officer of the Shell NXplorers Philippines, the Pilipinas Shell Petroleum Corporation will conduct a three-day face-to-face NXplorers Workshop at Puntod National High School, 8:00 am, September 26-28, 2022.
2. The activity is aimed to introduce young people to the complex and creative thinking needed to bring about positive change. Moreover, to build awareness, develop knowledge and provide thinking tools and complex problem-solving skills to the leaders of the future.
3. The participants of the said activity are the twenty-five (25) Science, Technology, Engineering and Mathematics (STEM) students from Puntod National High School enrolled in Grade 9-12 this school year. And five (5) teachers of the same school to participate as mentors. The names of the participants are contained in the enclosure.
4. In compliance with the IATF guidelines, all participants shall ensure that safety health standards are strictly followed/observed at all times. All personnel involved must wear face masks and observe social distancing.
5. In adherence to Equal Opportunity Policy (EOP), inclusive and fair treatment are accorded to all participants regardless of age, gender and sexual orientation, disability, religion and ethnicity.
6. Immediate compliance of this Memorandum is desired.

**CHERRY MAE L. LIMBACO - REYES**  
Schools Division Superintendent



Address: Fr. William F. Masterson Ave., Upper Balulang, Cagayan de Oro City  
Telephone: (08822)-8550048  
Email: [cagayandeoro.city@deped.gov.ph](mailto:cagayandeoro.city@deped.gov.ph)

For the Schools Division Superintendent:



**LOREBINA C. CARRASCO**

OIC, Assistant Schools Division Superintendent  
Officer In-Charge  
Office of the Schools Division Superintendent

MJTG/OM-shell nxplorers workshop  
September 21, 2022



**Address:** Fr. William F. Masterson Ave., Upper Balulang, Cagayan de Oro City  
**Telephone:** (08822)-8550048  
**Email:** cagayandeoro.city@deped.gov.ph

### List of Official STEM STUDENT Participants

Name of Participant	Grade level and Section	Class Adviser
1. Cyra May B. Apor	Grade 10 - Freedom	Mrs. Marites P. Ayuma
2. Roseann Simacon	Grade 10 - Freedom	Mrs. Marites P. Ayuma
3. Ralph Rohann M. Dacer	Grade 10 - Freedom	Mrs. Marites P. Ayuma
4. Jovita Mae M. Manriquez	Grade 10 - Peace	Miss Jocelyn Rovie N. Salo
5. Nuel Francis M. Gargar	Grade 10 - Peace	Miss Jocelyn Rovie N. Salo
6. Hannah T. Lacno	Grade 10 - Peace	Miss Jocelyn Rovie N. Salo
7. Jamila Martine A. Visperas	Grade 10 - Diligence	Mrs. Debbie Claire B. Urbina
8. Anthony C. Carzon	Grade 10 - Diligence	Mrs. Debbie Claire B. Urbina
9. Kith Catherine G. Bayarcal	Grade 9 - Fidelity	Mrs. Corazon M. Baculio
10. Angel Leslie L. Nano	Grade 9 - Fidelity	Mrs. Corazon M. Baculio
11. Qwyancy B. Falconit	Grade 9 - Fidelity	Mrs. Corazon M. Baculio
12. Jennica Faye M. Baculio	Grade 9 - Fidelity	Mrs. Corazon M. Baculio
13. Leo Zeppelin B. Paurom	Grade 9 - Fidelity	Mrs. Corazon M. Baculio
14. Gian Carlo M. Aclan	Grade 9 - Fidelity	Mrs. Corazon M. Baculio
15. Kim Elvis Andujar	Grade 9 - Fidelity	Mrs. Corazon M. Baculio
16. Tissa Angela Dela Cruz	Grade 12 - Simplicity	Mrs. Renee Marie C. Manalang
17. Beverly Moaña	Grade 12 - Simplicity	Mrs. Renee Marie C. Manalang
18. James Carlo P. Bosque	Grade 12 - Integrity	Mr. Arvin Jan L. Tachado
19. James Labor	Grade 12 - Integrity	Mr. Arvin Jan L. Tachado
20. Michael Jay Bomotano	Grade 11 - Serenity	Miss. Maria Lourdes A. Monte
21. Camille Dela Cruz	Grade 11 - Serenity	Miss. Maria Lourdes A. Monte
22. Marc Julius Talara	Grade 11 - Dignity	Mr. Darwin D. Estoque
23. Veronica Mae Saraos	Grade 11 - Dignity	Mr. Darwin D. Estoque
24. John Lloyd Valenzuela	Grade 11 - Honesty	Mrs. Jean Marie E. Cuevas
25. Katarzyna Sevilla	Grade 11 - Honesty	Mrs. Jean Marie E. Cuevas

### List of Official Science-Teacher Participants

Name of Participant	Grade level Taught	Area of Expertise in Science
1. Corazon M. Baculio	Grade 9 & Grade 8	General Science
2. Shiela S. Abrea	Grade 8	General Science
3. Lucy P. Sogoc	Grade 10	General Science
4. Ainah M. Abantas	Grade 7	General Science
5. Mary Lourdes A. Monte	Grade 11 & Grade 12	Physical Science



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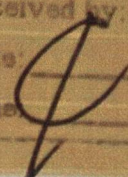
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DepEd

AGAYAN DE ORO CITY DIVISION

Received by:  SEP 13 2022

Date: SEP 13 2022

Time: 4:19

12 September 2022

**MRS. CHERRY MAE L. LIMBACO-REYES**  
**School Division Superintendent**  
**Division of Cagayan de Oro**

Dear Mrs. Limbaco-Reyes,

Warm greetings from Shell!

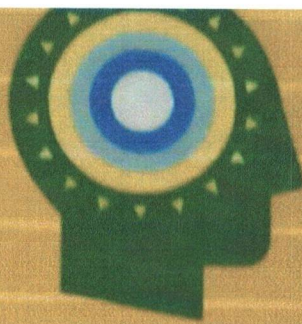
Pilipinas Shell Petroleum Corporation is cordially seeking your approval to allow us to conduct a co-curricular workshop with Puntod National High School, also for them to undergo NXplorers-Shell's global STEM program. It is an innovative educational programme that introduces young people to the complex and creative thinking needed to bring about positive change. Focused on the food-water-energy nexus, the programme aims to build awareness, develop knowledge and provide thinking tools and complex problem-solving skills to the leaders of the future.

Since Puntod National High School is one of Shell's community schools we have been conducting the NXplorers Workshop and TBIC with them since 2018. We also have initially communicated directly with the school about this year's workshop over the last few months and they have agreed to do the workshop and choose the dates indicated below on their own accord. In line with that we are aiming to invite **twenty-five (25) Science, Technology, Engineering and Mathematics (STEM) students** from **Puntod National High School** enrolled in **Grades 9 to 12 for SY 2022-2023** to participate in a **three-day face to face NXplorers Workshop** to be conducted by trained facilitators at Puntod National High School, on **September 26-28, 2022**. We are also inviting up to five (5) teachers from Puntod National High School to participate as the team mentors/coach.

Please see below the workshop details:

- **Date: between September 26-28, 2022 (3 days session)**
- **Workshop time: 8:00AM - 5:00PM**
- **No. of students: 25pax, from Grade 9-12 for SY 2022-2023**
- **No. teachers: 5**





After the NXplorers workshop at Puntod National High School, NXplorers student teams will be invited to join the Shell NXplorers The Bright Ideas Challenge - a friendly competition cum exhibit of innovative projects addressing local issues on food, water, and energy developed using the NXplorers methodology. The invitation, mechanics and details of the Shell NXplorers TBIC will be sent to Puntod National High School at a later date.

We also attached in this letter a brief background about NXplorers for your reference. For more information about NXplorers, please visit [www.nxplorers.com](http://www.nxplorers.com).

We will be happy to discuss information and details of the workshop at your preferred date and time. Please feel free to contact Ms. Jaymee Benito, Shell NXplorers Secretariat team at 09199127531 or email us at [shellnxplorerssph@gmail.com](mailto:shellnxplorerssph@gmail.com) to express your approval in the Puntod National High School X NXplorers Program Workshop.

We look forward to your participation. Together, let's make the future!

Beverly Precious P. Berberabe  
Shell NXplorers Philippines Lead  
[b.berberabe@shell.com](mailto:b.berberabe@shell.com)



## NXPLOERS and STEM

### INTRODUCTION

In 2014, Shell Projects and Technology leadership commissioned the development of a programme to help equip young people to embrace complexity through real world issues. The programme, which is sponsored by Shell and developed by Shaping Learning, offers a great way to enhance the STEM offer in your school.

### PROGRAMME OBJECTIVES

The NXplorers programme sets out to:

- empower young people to address the complex challenges faced by the world today and to become agents of change
- provide the tools, methodologies and skills needed to tackle real world problems using collaborative, innovative and inter-disciplinary approaches
- develop STEM habits of mind through critical thinking and complex problem solving skills.

### CONTENT

The NXplorers programme uses a combination of systems thinking, scenario planning and a theory of change methodology to show young people how to deal with complexity. This way of thinking – known as NXthinking – is applied to the food, water, energy nexus, a context that provides real and relevant complex challenges across the globe.

### IMPLEMENTATION

Trained facilitators deliver the ten modules of the NXplorers programme in a series of practical workshop sessions.

1. Before the workshop: Participants are asked to identify potential food, water, energy nexus issues in their local or national context.

2. Facilitator workshop (optional): This workshop is available to students or staff interested in becoming a NXplorers facilitator. Successful completion of this workshop enables participants to take a facilitation role in the main NXplorers workshop.

3. Main NXplorers workshop: Students learn how to apply NXthinking and the NXplorers methodology to a complex issue and develop real world solutions. Students start to record their NXplorers journey and their thinking in the online collaboration space. Students develop an action plan and timeline for the project (anticipated to be between 6 and 12 months). Students present their NXplorers project and action plans.

4. NXplorers project in schools: On completion of the workshop, students lead the implementation of their projects using NXthinking and the NXplorers toolkit, with staff support. They record progress – and setbacks – in the online collaboration space and ‘call out’ to other NXplorers for help, advice and support. Schools allocate time for the implementation, review and refinement of each NXplorers project. This can be an integral part of the STEM offer within the curriculum or part of an enrichment programme. Regional NXplorers teams provide ongoing support to help maintain momentum and ensure good progress is being made.

### BENEFITS

- High-quality professional development for teachers.
- Unique programme materials and tools that enrich and enhance STEM provision.
- A transformational skillset for students and future leaders that provides the capabilities for complex and inter-disciplinary thinking.
- A global collaborative movement for positive change applying STEM-related solutions to complex challenges.

**Shell**  
**NXplorers**

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## NXplorers in action - Qatar

This is the journey of one group of first time NXplorers in Qatar.

### Identifying local issues

The students started by identifying relevant local issues. They wanted to find out how they could optimise the use of food, water and energy to help create a more sustainable future. They were interested in how their school could create a responsible and sustainable model for the future of food, water and energy.

### Using the NXplorers toolkit to dig deeper

As they explored the issues, the NXplorers became increasingly concerned about the vulnerability of their food security. They recognised that global political and economic factors could have a major impact on the supply chain and create a massive rise in the price of food – a situation that would be unsustainable for any length of time.

### Using NXthinking to create ideas and real world solutions

The students applied NXthinking to create ideas. How could they turn an arid, desert landscape into productive agricultural land? Was there a cheap and effective way of collecting clean water? Which fruits and vegetables are best suited to a harsh desert climate?

### Creating future scenarios

The students were ambitious - they used the scenario planning quadrant tool to create a future scenario where Qatar was a self-sufficient food-producing nation, with a year of food reserves stored up. The feasibility funnel tool enabled them to work out which of their ideas for change would be manageable and get them started towards achieving their ambitious target.

### Taking positive action

The groups realised that their solutions drew on a range of STEM ideas and that they would be more powerful if they were combined. Selecting the right plants for their market garden – ones that were able to flourish with only a small amount of water – was crucial. Working with design engineers the students were able to create a solar floating desalination unit that used solar energy to collect clean water that could be used in the market garden. And finally, they designed a triangular polytunnel that used the sun to evaporate seawater. Desalinated water condenses at the top of the polytunnel and runs down the sides to water the plants, leaving salt as a by-product that can be used elsewhere. These ideas are in place and are already beginning to make a difference.

### Continuing the journey

Having used the NXplorers programme to find possible solutions to one nexus challenge, the local community has since approached the students with another – how to increase the use of public transport. The NXplorers toolkit is being used once again as the students explore this new issue and work towards even more positive change.

