



# STEM

SCIENCE | TECHNOLOGY | ENGINEERING | MATHEMATICS

## Trinidad and Tobago STEM Programme Quarterly Newsletter

JUNE, 2018

VOL. 2

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### WELCOME

Welcome to the third and final term for the school year 2017/2018. This term has been filled with activities as the STEM programme hosted an Easter Vacation Camp, the inaugural Trinidad and Tobago STEM Education National Consultation and the STEM Saturday workshops throughout the term. As the term and school year comes to an end, the STEM Saturday workshops go on a two-month vacation break. Let us also take a look at 'What's Next' for the STEM Programme in the upcoming months.



# The Trinidad and Tobago STEM Education National Consultation



Energy and innovation have been the heartbeat of both Trinidad & Tobago and Shell. The Trinidad and Tobago STEM Programme has been developed by Shell Trinidad and Tobago as a mechanism for transformation of the education system to make it more responsive to labour market requirements. The expected outcomes of the programme are the development of confident, knowledgeable and innovative students who are better equipped to manage social challenges and contribute to economic development and diversification. Recognizing that this culture of innovation can only be developed and sustained through a collaborative approach with stakeholders in the public and private sector, Shell Trinidad and Tobago in partnership with the Ministry of Education hosted the inaugural STEM Education National Consultation on Wednesday 16th May 2018 at the HYATT Regency.

*“The programme has illustrated to us that we can achieve even more through a focus on STEM Education via industry support and policy changes. We have recognized that we need greater support from industry in general, advocacy groups and the energy alliance”*

The objective of the consultation was to create a platform for stakeholders in STEM education and careers to collectively discuss a way forward for STEM in Trinidad and Tobago. “Stakeholders, with the Ministry of Education as the coordinating body, must synergize, network, collaborate and cooperate in the implementation of STREAM (and its variation of STEM) education projects in schools” stated the Honourable Anthony Garcia, Minister of Education who delivered the feature address. The other speakers that provided the opening remarks for the National Consultation included:

- Welcome and opening remarks - **Leslie Bowrin**, External Relations Advisor, Shell Trinidad and Tobago, Chairman
- Overview of STEM Programme - **Karen Lynch**, Principal Consultant Sacoda Serv Ltd
- The Fourth Industrial Revolution and T & T’s Global Competitiveness - **Ms. Indera Sagewan**, Economist
- STEM Imperative for Trinidad & Tobago - Colette Hirstius, General Manager Development, Shell Trinidad & Tobago
- Overview of Shell’s Global STEM Programme/Introduction to Nxploers - **Mr. Tariq Hussain**, STEM Manager, ER, Social Performance Centre of Excellence (CoE), (Shell, UK)



“The programme has illustrated to us that we can achieve even more through a focus on STEM Education via industry support and policy changes. We have recognized that we need greater support from industry in general, advocacy groups and the energy alliance.”

These sentiments were expressed by Karen Lynch, Principal Consultant at Sacoda Serv as she provided the overview of the Shell Trinidad and Tobago STEM Programme from its inception on 2014.

# The Trinidad and Tobago STEM Education National Consultation

Representatives from the Office of the Prime Minister and other government ministries and agencies, tertiary education institutions, energy and energy related companies, advocacy groups and civil society, STEM teachers, students and parents, other STEM groups and facilitators in the Shell Trinidad and Tobago STEM Programme were present at the STEM Education National Consultation.

The consultation workshop provided an opportunity for key stakeholders in STEM education to contribute to the expansion of STEM in the education system. Facilitated by Dr. Gwendoline Williams and Maria Mason-Roberts & Associates, table discussions addressed assigned topics and questions. Representatives from the public and private sector, academia and at least one foreign embassy provided their perspectives and their contributions on the topics leading to rich discussions in each group.

A STEM Education policy document will subsequently be developed based on the collective recommendations and support from stakeholders participating in the National Consultation. This policy framework document will be utilised by the Ministry of Education as the background document that will guide the development of a STEM education policy. This will support the realisation of one of the Government of Trinidad and Tobago's pillars from its framework for sustainable development: 'to attain sustainable integral development and a more diversified, knowledge-intensive economy, built on the native genius of our people'



# STEM is Life: STEM EASTER VACATION CAMP

The STEM Easter Vacation Camp 2018 was held from Tuesday 3rd April to Monday 9th April 2018 at the Bishop's Anstey Trinity East College. The set theme "STEM = Life" allowed the incoming Form 1 students in the Shell Bursary programme, an introduction to the STEM programme. The activities planned around the theme, and were chosen to expose and engage the new students to the world of STEM.

From the very first day engaging ice-breaker activities, interactive critical and creative thinking and lifeskills sessions set the tone for the students for the remaining activities to come. The students performed biology experiments, built a glider out of foam, learnt about artificial intelligence, engaged in a raft challenge, interacted with the Shell Science Bus team during a visit and were delighted by the magic science show by the Mad Science.



The highlight of the camp was a field trip to the Chuck E Cheese establishment where the students learnt how to make pizzas and the role that yeast plays in the making of the dough. This was followed by a tour of the games room where they were privy to the mechanics behind the tokens and tickets distribution inside the machines as well as some of the troubleshooting processes. After all of this learning they were treated to playing games in the games room.....who says you can't have fun while learning!



# STEM EASTER VACATION CAMP



# STEM Saturdays- This Term

## Wildlife

When you can't go to the outdoors, you bring the outdoors to you. The El Socorro Centre for Wildlife Conservation was able to bring an element of the outdoors to STEM students this term. Exploring the conservation of our forests and the protection of endangered species in Trinidad and Tobago students of St Francis Boys College and San Fernando Central were exposed to a realm of the local wildlife that goes beyond their school and backyards. For children wildlife can be a great adventure for many or a great fear for some.

The STEM Programme allows students to mentally and physically explore wildlife in comfort through hands-on learning and experiences. Students learnt about local species of animals, some of which are unique to Trinidad and Tobago and parts of northern Venezuela as well as how these animals can form part of our ecotourism offering.

The best part for the students: interacting with the snakes, owls and other animals brought to classroom by The El Socorro Centre for Wildlife Conservation team.



## STEM Challenge: Wrecking Ball

STEM challenges can be some of the most exciting activities for students each term, where they are challenged to design and build a model that achieves a particular goal.

One of the challenges this term for the students at the ECMA Centre was the Wrecking Ball Challenge. For this activity students were challenged to build a standing, portable structure that could knock down targets two inches away with a ball. Following visual direction from a short video, students then huddled in small groups with their materials to complete the challenge. These type of activities allow students to freely utilise both critical and creative thinking skills. For this particular challenge the students also had to utilise principals of structural and demolition engineering.

The competitive energy was high. Which group could knock down the most targets with three chances? Challenge Accepted!





Woodbrook Secondary students with Tech4Agri

# STEM Saturdays- This Term



Cowen Hamilton Secondary students completing a STEM challenge



Debe High School students in an IT session

# STEM Partners- FACILITATOR FOCUS

# Q+A

The facilitators in the programme provide the unique experiences and the 'Aha moments' for students. But who are these facilitators? They are a mixed group that consists of teachers, experts and organizations in the field of STEM. The facilitators are essential partners in the programme. This feature introduces the STEM Programme Facilitators in a brief Q&A session.

## Quintin Prescod

**When did you start facilitating in the programme?**

In September 2015 I started STEM programme.

**Why did you decide to join the STEM programme?**

A fellow teacher asked if any teachers were interested in helping students learn Mathematics on the weekend, immediately I accepted the challenge.

**What are your hopes for the programme?**

I hope to continue to change students' view of Mathematics and also show them that learning Mathematics could be as fun and thought provoking as some of their other favorite subjects.

**What was it like when you first started the programme?**

I was eager to be a part of the programme and I wanted to interact with students from schools I didn't normally teach at on a daily basis.

**What changes have you seen since you first started?**

I am seeing other areas that were not previously in the STEM programme being added like Agriculture which is a good way to diversify the programme.

**What subject/s are you teaching? What is unique different or engaging about your sessions?**

Mathematics.

In my sessions I tend to show pupils the fun aspect of Mathematics and offer them various ways to solve problems. I aim deliver my sessions different to their everyday Mathematics class. I often give the student Mathematics puzzles and riddles that they would have probably never attempted previously. I also try to understand the students of today and use methods that they will be readily able to understand and relate to.

**Why do you think your subject area is important for students?**

Mathematics involves a great deal of critical thinking and problem solving. They are two very important life skills that are needed when students transition from secondary, tertiary and the more importantly in the world of work.

**How does the subject area you're teaching play into the development of the T&T and the globe?**

Mathematics develops logical thinkers. Having students think more logically will only help develop a smarter workforce. That workforce will be willing and able to challenge any other countries on a global scale despite how large or small their population, as they will all be on the same intellectual level.



# STEM Partners- FACILITATOR FOCUS

## Q+A

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### Why do you think your subject area is important for students?

Every major country is rushing to create their own version of A.I. And the need for programmers and A.I. Techs is growing exponentially as the industry continues to expand. Because technology is integrally wrapped together with everything we do today, even if the students don't become programmers or A.I. technicians, understanding how the technology works will be vital in helping them in every other field they study in the future.

### How does the subject area you're teaching play into the development of the T&T and the globe?

Programming is one of the largest fields today. And all technology requires some form of programming. Not to mention the world is moving towards A.I. . This is the future of technology and they need to understand how it works to be able to be part of that future.

## Anthony Petit

**When did you start facilitating in the programme?**  
2016

### Why did you decide to join the STEM programme?

Because it gave me an opportunity to pass on information to young people that they need in today's I.T. connected world to get ahead.

What are your hopes for the programme?

That it expands to Tobago as well as other schools. I've been asked by parents from other school how they can get STEM to come and teach their kids. And I truly feel this expansion is vital because the kids need this information desperately if they're to have a chance in the future



### What was like when you first started the programme?

It was interesting. Many of these young kids don't want to be there on a Saturday morning so the challenge was to make them look forward to coming to class by making the session interesting to them on many levels.

### What changes have you seen since you first started?

Inclusion of extra schools and other forms than the original set.

### What subject/s are you teaching? What is unique different or engaging about your sessions?

I.T. and Programming. The sessions are focused on learning about programming. Learning about Artificial Intelligence Programs. Interacting with actual Artificial Intelligence Programs. Actual programming. Creating a Pseudo A.I. The I.T. World and how it works in the real world. Question and answer sessions from the students. Creating actual programs they have chosen rather than forcing them to do something I want them to do. I engage the students so they learn through active participation and by teaching. To me, the best way to get them to remember the coursework is to actually have THEM answer questions, rather than just sit back and listen to me talk. I also try and make the class fun. Kids today have short attention spans; so you have to be innovative in your approach to teaching them to keep them interested.

# WHAT'S NEXT

## July/August Vacation Camp

One week STEM based camp for students in the Shell Trinidad and Tobago Bursary Programme

**Junior Camp:** 23rd-31st July 2018

**Senior Camp:** 2nd – 10th August 2018

**Closing Ceremony:** 17th August 2018

## STEM Outreach

STEM Programme Outreach and new students intake for the new school year 2018/2019.



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