



ASTME

Commonwealth Association of Science, Technology and Mathematics Educators

e-Newsletter

Number 18



May 2022

www.castme.online

Delivering a Common Future:

Connecting, Innovating, Transforming

Editorial

As a relative newcomer to CASTME, I will do my best to continue the good work previously done by Jonathan Ling in reporting the exciting activities of CASTME members and associates.

To introduce myself, I am a Maths and Physics graduate and Early years teacher based in Berkshire, England. A strong advocate for lifelong learning for all, I am passionate about the promotion of Early years learning through STEM and believe strongly in supporting and enabling parents and carers to understand the importance of their role as their children's first and most significant teachers. I have included in this newsletter the Questions flyer I have used for Every Day Science workshops with parents and children.

Rachel Morgan

The Chair of CASTME, Dr Sue Dale Tunnicliffe was invited to the **Commonwealth Day Service** at Westminster Abbey on Monday 14th March 2022. This year it was in the presence of His Royal Highness Prince Charles on behalf of the Queen. All present affirm this pledge every year.

The Commonwealth Pledge

We affirm that every person possesses unique worth and dignity.

We affirm our respect for nature, and that we will be stewards of the earth by caring for every part of it, and for it as a whole.

We affirm our belief in justice for everyone and peace between peoples and nations.

Joining together in kinship and affinity, in diversity and unity, as members of a worldwide family of nations, we build on shared inheritances.

We cooperate with mutual respect and goodwill to deliver a common future for the good of all.

Through Commonwealth connection we see each other, hear each other, learn from one another, and innovate to transform our communities, our nations and our world.



**Dennis Chisman Memorial lecture 2022**

On 16th March, the excellent Professor Peter Okebukola, Lagos University Nigeria, CASTME adviser and colleague of late Dennis Chisman gave a wonderfully well-received lecture titled

Our Children, Our Future: STE(A)M from the Lens of Babies

The professor shared a tribute to Dennis Chisman, one of the founders in CASTME in 1974, and then gave a lecture tracing the growth of STE(A)M over the last two decades, especially in the Commonwealth. There was discussion around what we know about how children learn science, what we need to know and how to secure successful science teaching for the 21st Century within the reality and challenges of our world. How do we intervene to assure that our children today grow up to contribute more meaningfully to solving emerging global problems especially those relating to STE(A)M? Exemplars of projects in the Commonwealth addressing these questions were presented.

The complete lecture can be viewed by following this link:

<https://youtu.be/3KkFZynFesg>

Report on Science Activities Sheets

With lockdown severely limiting early years and school science activities, I was asked to write some simple science pursuits that could be carried out by parents and children at home with limited resources and knowledge and understanding of science. This has evolved into a monthly sheet of simple science activities that can be carried out anywhere. So far thirteen sheets have been written and made available to all CASTME groups. They cover a wide range of science and are suitable for ages 3-8 and are hopefully adaptable for any culture. Resources used are minimal and are generally things that are found in the home, cardboard rolls, salt, wire coat hangers and yoghurt pots. Where applicable SDG are inserted.

I welcome any ideas for future sheets and photographs that I can use to demonstrate an activity.

Some of these activities have been used in a book published in Ukraine for hearing impaired youngsters.

Denise Balmer



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Responses from recipients of 2021 Awards

The Findel CASTME Education Award 2021

Thank you very much for selecting our entry '*Designing and Developing Teacher Handbook for Science experiences at Remote Small Rural Primary Schools through Use of Mini-Tools Kit: Essentiality of Contextualization and Teacher Empowerment*' for the Findel CASTME Education Award 2021 to the Centre for Unfolding Learning Potentials (CULP), NGO Jaipur, Rajasthan, India.

The Voucher amount will be used by us to procure equipment or educational resources from the Philip Harris International Catalogue which will be used for the promotion of the innovative science activities among teachers and students in rural schools of Rajasthan.

Dr. O.P. Kulhari

Secretary

CULP (Centre for Unfolding Learning Potentials)

Findel CASTME PROTECT OUR PLANET AWARD 2021

Thank you very much on behalf of SOB, Mauritius and myself. It was a pleasure to know that we have been honoured with the award. It was really a great feeling that our work has been appreciated. We had a lot of future plans, but unfortunately the pandemic situation has restricted us to webinars and zoom lessons

For World Peace Day, I, as the President of SOB, got the opportunity to address the teachers of Terre Rouge SSS, Mauritius on sustainable education. We had to postpone many of our community projects, most of our meetings are restricted to online. We have many projects like starting aquaponics in some schools, composting and kitchen gardens in community centres, teaching students how to prepare seedballs to encourage planting, adopting recently opened Science Club in schools etc.

Let us hope 2022 be a better year than '21 and give us the opportunity to serve students and the public and put Biology in a better prospective.

Ellora Dhunnoo President ,Society Of Biology, Mauritius



**UTILIZING CASTME AWARD RESOURCE MATERIALS
FOR PLAY CYCLE PROJECT**

1.0 Preamble

The 2020 CASTME Community Award presented to Prof. Ibiyinka Ogunlade on the platform of Children-in-Science & Technology (CIST); (An organisation aimed at popularising Science and Technology among Children for self reliance) comprising of scientific materials were utilized for play cycle project created by Sue Tucliffe 2021.

2.0 Two of the resource materials viz: Binoculars and Balancing Pteranodon were put to use.

Case 1: Binoculars

A boy-child, Michael is making use of Binoculars to observe and explore the sights and sound of far objects such as birds perching on *Polyalthia longifolia* (Masquerade tree). Figure 1



Figure 1: Boy-child exploring distant objects with Binoculars

Case 2: Pteranodon

The children in the Community were excited and amazed as Daniel aged four balanced a big bird-like object, Pteranodon on his fingertip as against the normal law of gravity (gravitational force).



Figure 2: Children playing with Balancing Pteranodon

3.0. The impact of the CASTME Award Resource materials supplied by Findel is shown in Figure 3 with children involved in STEM activities such as:

- a. Grouping of plants – sorting, identification and classification.

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- b. Keeping the body in shape- skeleton
- c. Tug of war- Equal forces



Figure 3: Children involved in STEM activities

4.0. Conclusion

The totality of utilizing the 2020 CASTME Award resource materials for the benefit of the children in the Community is the production and distribution of 1000 exercise books for the use of schooling activities.



Figure 4: Exercise book



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Mothers Talking Everyday Science project in Sreepur

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Started in 2010, this project is delivered as part of the Literacy programme and designed to empower mothers by improving their understanding of STEM in their daily activities. They are encouraged to talk with their children and other mothers as they carry out routine tasks everyday to increase understanding and interest in STEM.

Session example Exploring the effect of heating water: Water vapour



I ask mothers first at the beginning of this class - what do you see when you heat a pot of water or milk for 1 hour at high temperature? The mothers' answer was to reduce the milk or water in the pot. I ask them why it decreases? Their answer was that the pot absorbed water or dried with the fire.

Then I discussed with them how the liquid turns into steam, and how the liquid is obtained by cooling the steam. And I have carefully explained to them in a practical way in the kitchen where they can see the steam turns back into water

Report by Lina, Facilitator

It's British Science Week, 11th -20th March, and one of the activities that the Sreepur Village runs is the creation and nurturing of sack gardens. This is an aspect of the Mothers Talking Everyday Science project and is a particularly important activity because when the mothers return to mainstream society they will be experienced in how to prepare a container in which to grow food plants and how to care for them.



Such knowledge is important for the mothers as growing their own vegetables means they can independently provide their children with nutritional fresh food.

The mothers at Sreepur learn the science involved in growing vegetables by understanding how seeds germinate, the stages of growth and the time period from seed to fruit, or to vegetables like lettuce or cabbage and the right time that they should be eaten.



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The mothers also learn about the type of growth and how to protect developing seedlings as well as the importance of staking the plants for support as they grow. The mothers observe the stages in development from seed to adult plant bearing fruits, in the present case tomatoes.

They are taught that the uptake of water of the dormant seed is vital before the seed will germinate and the other conditions that the seed and developing plant requires.

Even though sacks are used, other containers can also be utilised or even constructed from, for example, bamboo stems. This also introduces some basic engineering skills for the mothers.

"I hope that these new gardeners will talk to their children about growing food and the care of plants which will also help develop the children's science literacy."

Talk and Do Science on Facebook and Instagram

<https://www.facebook.com/Talk-and-Do-Science-at-Home-116167663504654/>

<https://www.instagram.com/castmeactivities/>



Our aim through these pages is to encourage and support parents and carers to nurture children's natural curiosity by observing, talking and exploring with them every day at home and during their experiences of the world.

Please send photos and reports from everyday STEM and talk related activities for inclusion on these pages to the editor.



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Action Through Enterprise

www.ateghana.org

We received this inspirational account from Sarah Gardner, showcasing what can be achieved with commitment and dedication to a cause. We are waiting to hear more details about their STEM activities in the future.

In February 2012, I was granted a sabbatical from my job to spend a year working for Voluntary Services Overseas (VSO). Posted to Lawra – a remote area of Upper West Ghana close to the border of Burkina Faso. I had an extremely challenging year in hot, rural Lawra where I was out of depth both professionally and personally.

Lawra, 18 hours north of Accra, is geographically isolated, beautiful and rich in culture. The UN describes it as a community with 'chronic food shortages and 100% poverty incidence'. I built relationships with these children and their families, learning about the needs of the community, listening to local people and creating trusting friendships.

By the end of October 2012, Action Through Enterprise (ATE) had been born and I decided not to return to teaching. 10 years later we are incredibly proud to run a brilliant small charity, working specifically in Lawra, to address root causes of poverty, leaving no one behind. The heroes of the story are my team – local talent, with local knowledge, doing brilliant work in the local language. Our team of 34 staff is outstanding – bright, skilled, motivated and hardworking.

ATE has achieved fantastic results in education by enabling children to access and complete education through the provision of free school meals and educational resources. We work at 7 large schools transforming opportunities for young people via 1000 free school meals each day! I believe completely in the power of education to break the cycle of debilitating poverty.

We also support economic development by working with small business owners. We provide focused training, mentoring and financial support to enable entrepreneurs to grow commercial education skills and make greater profits to support themselves and their families year-round. With over 110 established businesses, we are now experts in setting up successful micro businesses which provide income, jobs and security to families.

We are also immensely proud to make it possible for families with disabled children to overcome isolation and discrimination, and find renewed strength to raise their children. Our SNAP Programme supports 250 disabled children to access schools, healthcare and social welfare. Advocating for inclusion is complicated work which has transformational results – just this week we employed a social worker to join our SNAP team and lead fight for equality in Upper West Ghana.

We believe in the power of working in partnership with local people to enable them to thrive, to promote economic development and improve the quality of life for all people in Lawra. We are incredibly proud of ATE's journey so far, and excited to continue to improve and grow our work. By 2025, we plan for every person in Lawra to be able to access our work, if they wish to. This is not about changing the world; it's about changing Lawra. ATE is small, but its work is transformational.

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Some Useful Links

CASTME is a member of ICASE, the International Council of Associations for Science Education. Here is a link to their latest newsletter, where you can read about recent activities.

http://www.icasonline.net/newsletter/icas_01_02_2022.pdf

The Royal Commonwealth society newsletter, Commonwealth voices, gives interesting details about the impact of their activities including The Queen's Commonwealth Essay competition.

<https://cts.vresp.com/c/?RoyalCommonwealthSoc/be48e39ea7/d674a4ef1e/d8b4abe093>

Malcolm Rifkind's Commonwealth Day lecture:

https://assets.nationbuilder.com/cecommorguk/pages/164/attachments/original/1648892781/Rt_Hon_Malcolm_Rifkind's_Lecture.pdf?1648892781

UPCOMING MEETINGS –

Please Contact Kath Nugent for joining instructions (kathnugent@yahoo.co.uk)

Informal Meeting on Zoom Wednesday 25th May – All welcome

AGM Wednesday 22nd June at 2.00pm BST On Zoom

CASTME links Science, Technology, Engineering and Mathematics (STEM) Educators across the Commonwealth

It has a UK-based board of trustees, with regional branches and advisers in the Commonwealth

Editor's Note: For the next edition of this newsletter please send articles to **Rachel Morgan:**

rachelmorg@aol.com by 31st July 2022

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Everyday Science Poster

These open-ended questions are very useful for encouraging parents and children to talk about their observations and to encourage exploration and investigation in every day activities.

What does it look like?

How does it feel?

What can you smell?

What does it taste like?

What can you hear?

How are they different?

How are they similar?

What would happen if.....?

How can we do it better?

How could we.....?

What has changed?

Why did that happen?





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