



CEMASTE INFO

Newsletter



STEM Outreach

Editorial

CEMASTEA has had a busy year as we continue offering flagship training and research programs.

We are glad to provide our valued stakeholders and clients with the 13th issue of the CEMASTEIA Info Newsletter. This issue discusses some of the centre's activities in Quarter Three. This covers activities relevant to our core mandate of training and research in Science, technology, engineering, and mathematics (STEM) education.



The centre successfully implemented training for County Teacher Capacity Development Committees (CTCDC) and Sub-County Directors of Education from the 47 Counties.. The training focused on effectively managing INSET activities, including prudent financial and resource management. Members of CTCDC and Directors of Education are instrumental in monitoring and supporting CEMASTEIA and SMASE activities at the County level.

Focus on learners continues to be a vital part of the centre's activities. The centre conducted numerous STEM outreach programmes in schools nationwide to mentor and inspire learners to accelerate the uptake of STEM subjects. The experiential, hands-on mathematics and science activities experienced during these outreaches have elicited excitement and demonstrated that learning science could be a joy. Through such events, competencies such as communication and collaboration, critical thinking and problem-solving skills are promoted. This programme continues, and schools are encouraged to contact CEMASTEIA to request their schools' inclusion whenever the outreach is in their County.

Climate change mitigation is of global concern. The government has committed to planting 15 billion trees by 2030. To support this initiative, CEMASTEIA has established a tree nursery and distributed 5,000 trees to schools and communities across the country. This Newsletter has articles related to innovative pedagogy and good classroom practices, practical lesson observation and the joy of outdoor teaching. The article on book review and Aesop's Fables continues to be exciting.

Enjoy your reading, and kindly give us your feedback.

Thuo Karanja, Editor

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Message from the CEO



A nation's future depends on continuously building the next generations of engineers, farmers, entrepreneurs, artisans, teachers, nurses, doctors and other workers. A common theme in all these fields is the central place Science, Technology, Engineering, and Mathematics (STEM) plays in imparting the necessary knowledge, skills and attitudes critical in a society's pursuit of its social, technological, infrastructural and economic well-being.

It is through the prism of innovative STEM programmes that CEMASTEIA is known. The centre's flagship programmes have majorly centred on developing the Capacity of teachers for good classroom practices.

However, we have diversified our portfolio and have successfully expanded the school visits to programmes to the innovative STEM outreach.

Outreach is the extension of services beyond the usual limits of mandated operations. It is in this spirit that CEMASTEIA's STEM outreach programme was born. The centre has gone beyond the call of duty, reached out to schools nationwide, and provided much-needed training, mentorship and inspiration. Starting in 2022, the overriding objective of the outreach activities is for CEMASTEIA's staff to visit schools and inspire students to consider pursuing STEM subjects and, ultimately, a career in a similar field. They do this through interesting STEM talks, fun sit-downs, interactive practical activities and productive group discussions, all aimed at demonstrating that STEM is not for an exclusive few but for all interested.

I'm delighted to note that with the emergence of social media, outreach opportunities have expanded into Instagram, Twitter, TikTok and other platforms where STEM-based content is reaching the public in their thousands in a straightforward form.

Finally, I urge all our readers to get involved in some form of outreach campaign in their fields of expertise, as these interactions with the younger generations carry a sense of hope, relatability and humanity. In our field, we believe that STEM is for everyone, regardless of age, economic status, race, gender or cultural background. It is with this in mind that we do what we do.

Thank you,

Jacinta L. Akatsa, HSC,
Chief Executive Officer, CEMASTEIA

Training for Sub-County Directors of Education

By LMakanda & WMagu

Centre for Mathematics, Science and Technology Education in Africa organised a Strengthening of Mathematics and Science Education (SMASE) workshop with the theme "*Strengthening Capacity of Sub-county Directors of Education to Support the Implementation of CBC and STEM Activities*". The training targeted Sub County Directors of Education in Kenya. The three-day workshop from 22- 24 February 2023 in Embu, Machakos, Naivasha and Kakamega attracted participants from all forty-seven counties.



Mr. Ernest Too, Deputy Director, Directorate Teacher Education, MOE during the opening ceremony

The workshop covered the implementation of CBC, STEM pathways and activities that promote learner-centred lessons for effective implementation of Competency-Based Curriculum (CBC), the process of establishing communities of practice through school-based INSET and the importance of supporting the implementation of CBC and STEM activities. Participants were trained on STEM activities for promoting learner-centred lessons (Inquiry-Based Learning), ICT integration in teaching and learning, virtual platforms and enhancing communities of practice through School-Based Lesson Study. During the training, participants engaged in group discussions, conducted experiments, shared experiences, and joined online meetings. They were taken through the CEMASTEIA portal, a Learning Management System.

The Chief Guest, Director General, Ministry of Education (MoE), represented by Mr Ernest Too, Deputy Director Education (DDE) Directorate Teacher Education, in his remarks, stated that the workshop was timely, as it would equip the participants with the relevant knowledge and skills relevant as education leaders in the changing times. Mr Too noted that the workshop aligned with the Government's developmental goals of improving citizen welfare by addressing inequalities in education. Additionally, it served as a platform for the participants to exchange ideas and best practices and develop strategies for addressing the challenges of education inequality. He applauded CEMASTEIA for organising the workshop and the critical role it continues to play in the training and research. Lastly, he appreciated the participants' continued leadership to ensure the effective implementation of CEMASTEIA programmes at the county level.

Mr Kizitio Makoba, Coordinator STEM programme at CEMASTEIA, represented the chief guest for the closing ceremony Chief Executive Officer, CEMASTEIA Mrs Jacinta Akatsa congratulated the participants for completing the workshop and thanked the Ministry of Education for the continued support accorded to CEMASTEIA programmes. The CEO challenged the participants to implement lessons learnt, particularly in lesson study, to make the lessons enjoyable for learners and teachers.



Deputy Director Education Mr. Ernest Too, MoE (centre), poses with Sub County Directors of Education, CQASOs, KEPSHA, KESSHA officials and CEMASTEIA staff during the SMASE 2023 SCDE workshop at Kakamega Regional Training Centre

Training for County Teacher Capacity Development Committees (CTCDC)

By LMakanda & WMagu



Regional Director of Education, Nyanza Mr. Nelson Sifuna and Regional Director of Teachers Service Commission in Rift Valley, Mr. Adow M. Barbad addressing the participants during workshops at Kakamega County

Training for County Teacher Capacity Development Committee (CTCDC) members occurred from 25th to 26th February 2023. CTCDCs are comprised of officers in the Ministry of Education and Teachers' Service Commission, school leaders and teachers responsible for assisting CEMASTEAs in planning and implementing INSET at the County level. The theme for the workshop was "Strengthening Capacity of the County Teacher Capacity Development Committee (CTCDC) members for effective implementation of CEMASTEAs programmes."

The two-day workshop conducted at several venues, including Embu, Machakos, Naivasha, and Kakamega, was facilitated by senior officers from the Ministry of Education, the Schools audit unit led by

Director Mrs Momanyi and CEMASTEAs staff.

The training also targeted Regional Directors of Education, Teachers' Service Commission Regional Directors, Regional Quality Assurance and Standard Officers, County Directors of Education and



Participants engaged in discussing the way forward during the training

Teachers Service Commission County Directors, County Quality Assurance and Standards Officers, Kenya Secondary Schools Principals Association and Kenya Primary Schools Heads Association from the 47 counties.

Participants engaged in various activities focused on the statutory and regulatory requirements to implement continuous teacher capacity development activities effectively. Sessions included highlights on audit findings on SMASE Funds, procurement, stores and assets and selection of trainers for JSS. Participants were engaged in the sessions through group

discussions and sharing of experiences.

The Chief Guest for the opening ceremony, Mr Nelson Sifuna, Regional Director of Education, Nyanza, echoed

the workshop's theme and assured CEMASTEAs of the regional office's continued support in implementing its programmes. He urged participants to nurture mathematics and science subjects in Junior Secondary Schools. During the closing ceremony, the Regional Director of the Teachers Service Commission, Rift Valley, Mr Adow M. Barbad, emphasised the importance of teacher capacity development in preparing students for the 21st Century. He highlighted the need for stakeholder engagement to develop teacher capacity and urged participants to share their skills and knowledge to implement CEMASTEAs INSET programmes effectively.

The CEO of CEMASTEAs, Mrs Jacinta Akatsa, in a speech read by Dr Daniel Mutitu, from CEMASTEAs appreciated the role CTCDC plays and noted that the workshop had enhanced participants' knowledge and skills in managing SMASE funds at the Counties.

CEMASTEA Steps-Up STEM Outreach & Mentorship

By BMacharia and DOrero

CEMASTEA has hosted students to participate in cutting-edge learning activities in STEM-related areas. However, the centre can only reach a restricted group of learners. Due to this limitation, the STEM outreach program was launched to enhance the number of schools and learners reached. The programme entails personnel from the centre visiting schools in the Counties and demonstrating innovations in teaching and learning STEM. The Special Programs and Student Learning Committee's STEM outreach and mentorship program has now been incorporated into the Center's core programs.

Experiments make students develop more interest in the subjects because they are able to relate with what they are taught in class. The outreach programme will go a long way in demystifying concepts in STEM subjects and change the attitude of learners as some of the concepts which hitherto looked difficult have been simplified.

Teacher Flanzie Physics and Chemistry Katoloni Secy Sch Machakos

The outreach programmes are intended to promote a positive attitude towards STEM subjects, bring out the joy and fun of learning, and inspire learners to excel and pursue careers related to Science and mathematics. In each school visited CEMASTEA showcased activities in Biology, Chemistry, Mathematics, Physics, ICT, Robotics, Education for Sustainable Development (ESD) and Climate change. The hands-on activities students engage in aim to provoke learners' critical thinking, creativity, innovativeness and problem-solving skills. Most of the concepts demonstrated utilise locally available materials that teachers can easily improvise. During the visits, teachers participate in the discussions and take time further to explain science and mathematics concepts to their learners.

The centre has successfully organised visits to several secondary and primary schools across some Counties. In Nakuru County: schools visited were Keriko, Njoro Day, Larmudiac and Mau Narok Secondary Schools; Katoloni, Katelembu, Katheka Kai and Machakos Township Secondary Schools in Machakos County; Ken Obura, St. John's Christostom, Bishop Abiero Shauri Moyo and Lions Day Secondary Schools in Kisumu County. The schools visited in Kakamega County were Kilimo Girls', St. Francis Xavier Shipalo, St. Patrick's Ikonyero, Emetetei and Our Lady of Assumption Shitoli Secondary Schools.



Emphasis on the use of visual aids in teaching science is vital in ensuring retention of knowledge; it helps learners in remembering concepts and enhancing their memory

Teacher Isabella, Kilimo Girls' Sec Sch. Kakamega

knowledge to boost their performance in STEM subjects. Teachers in the visited schools hailed the programme as an interactive and fun learning approach that captivates learners' interest in STEM subjects.

Picture Speak: STEM Outreach & Mentorship



A Giant Leap: CEMASTEА Trains 2000 Teachers Using It's Portal

By Paul Waibochi

CEMASTEА has increased by training over 2000 secondary school teachers of all subjects using its Learning management system (LMS) domiciled at the CEMASTEА portal (portal.cemastea.ac.ke). This successful ICT training conducted in 25 Counties had participants self-enrol for the course, work on activities and, after grading and authorisation by the facilitators, download an online certificate. The majority of teachers accessed the system using their mobile phones. This course was self-paced, with teachers doing much of the training on their own time with minimal guidance from the facilitators.

In the past, CEMASTEА has been training teachers on ICT integration in teaching and learning using a blended mode. The centre leveraged virtual platforms such as Zoom, Microsoft Teams, Google Meet, Big Blue Button, and Google Classroom. The LMS can enrol over 100,000 participants doing different courses and simultaneously access learning materials. CEMASTEА plans to use the portal for most of its training programmes.



The screenshot shows the CEMASTEА LMS portal interface. At the top, there is a navigation bar with a 'Back to Course' button and the course title 'ICT Integration Training 2022/2023'. Below the navigation bar, there is a sidebar menu on the left with items like 'Course Introduction', 'Background and rationale', 'Learning outcomes', and 'Unit 1: Virtual Meeting Platforms for Learning'. The main content area displays 'Activity 1: Create a meeting using a web conferencing tool' with a 'View' button and a 'Make a submission' button. Below the activity title, there is a list of four steps: 1. Create and schedule a meeting using any web conferencing tool you are conversant with. 2. Invite colleagues to the meeting. 3. Hold a meeting to discuss the following topic: *How to promote remote learning in Kenyan Education*. 4. Upload screenshots for the meeting showing different tabs and discussion point on how to promote remote learning.

Word of Encouragement



There is a time for everything and a season for every activity under the heavens
Ecclesiastes 3:1

Allah does not change people until they change themselves.
(Surah Ar-Ra'd, Quran 13:11)



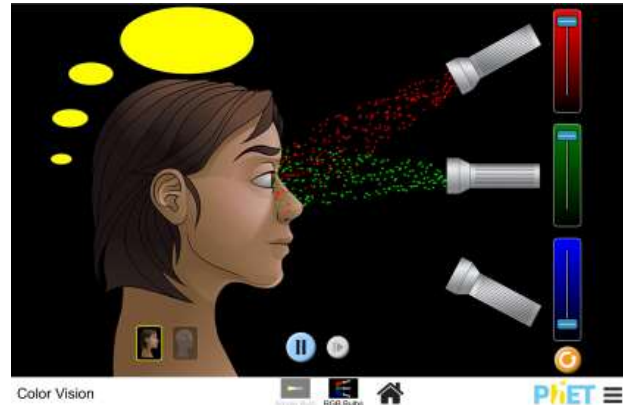
International Webinar: Advancing STEM Education in Africa through Effective use of ICT

By Mary W. Sichangi

In partnership with PhET-Colorado University, the CEMASTEAs successfully implemented an International webinar on the effective use of Information and Communication Technology (ICT) in learning to advance STEM education in Africa. The International Webinar from the 4th to the 6th of April, 2023, is an annual forum organised in the spirit of the centre's mission; "Continuous development of competencies for sustainable development through Science, Technology,

Engineering, and Mathematics (STEM) education".

Whereas technologies are a great resource, effective utilisation remains a challenge in STEM education in African classrooms (ADEA 2021). Educators' Capacity to innovatively employ ICT resources



Sample simulation <https://phet.colorado.edu/en/simulations/color-vision>



Participants during the opening and closing ceremony for the webinar

to deliver STEM education must be enhanced through sessions demonstrating the viability and improved perceptions to achieve frequent use.

The three-day webinar aimed at developing the Capacity of directors of

STEM education, school principals, head teachers, teacher trainers, heads of departments and teachers of STEM subjects to identify and integrate digital tools in STEM education. The forum attracted over 120 participants drawn from the following countries; Eswatini, Ghana, The Gambia, Nigeria, South Sudan, Tanzania, Senegal, Tanzania, Senegal, South Africa and Kenya. The event was officially opened on 5th April 2023 by the Director General, Ministry of Education (MoE), Dr Elyas Abdi, OGW, who Mr Hassan Duale, Director Field Coordination and Co-Curricular Activities MOE, Kenya, represented.

In his opening remarks, the chief guest stated that Sustainable Development Goal 4 emphasises equipping youth and adults with technical and vocational skills relevant to employment, decent jobs, and entrepreneurship. Mr Duale noted that the theme and content of the webinar are timely and relevant because STEM-related skills such as scientific literacy, 21st-century skills, innovation and technology are crucial for the success of Africa. The closing ceremony was graced by the Chief Executive Officer, CEMASTEAs, Mrs Jacinta Akatsa HSC, who congratulated the participants for completing the three-day International Webinar. She urged the participants to implement the lessons learned in their respective countries to enhance learning and develop computational thinkers capable of creating, innovating, and solving problems for sustainable development.

Effective Feedback on Lesson Observation

By Thuo Karanja

During school-based teacher professional development activities, particularly during lesson study, teachers are expected to observe each lesson. A group of biology teachers can collaboratively plan and observe a class implemented by one of them. Pedagogical leaders in a school, such as heads of departments or subject heads, could observe a lesson implemented by teachers in their department. Further, experienced teachers could observe classes implemented by newly recruited teachers during mentoring and coaching. In all these cases, a fundamental expectation is the delivery of feedback. In this article, we focus on the basic tenets of lesson feedback without necessarily getting into the details of pedagogy.

Feedback is a relationship of respect and trust. It is about helping people improve, not about making them feel bad. People want to receive feedback from those they trust. It should not be a senior-junior relationship. Feedback is effective when a teacher knows that the ones giving feedback believe in their abilities, appreciate their current efforts (to plan and implement a lesson) and recognise their growth potential. This way, teachers will most likely view the feedback as constructive and utilise it for improvement. Feedback is better-done face to face. Face-to-face feedback [as opposed to feedback through video conferencing or phone calls] is most effective and dynamic. Face-to-face conversations allow parties to ask questions and dig deeper into the issues at hand and enable contextualising vocal tones, body language and emotions. These are essential aspects of communication.



Teachers from Isiolo County collaboratively preparing a lesson

While a teacher needs to be told the reality of their observed lesson (esp. if one has significant concerns), feedback ought to be presented in a balanced perspective. The observer needs to point out some positives in the lesson, things that impressed you, such as effective learner participation, well-organised and executed lesson activities, logical flow of the lesson or the way a teacher handled a question(s). If some aspects of the lesson did not meet your expectations, frame your discussion to make the teacher feel that; while their current efforts and lesson outcomes are appreciated, there is room for improvement and growth. Focus on specific issues and not generalisations. What was good or needed improvement about the lesson: what did you observe; what was the evidence? Demonstrate to the teacher that you were keen on observing their lesson. With evidence (written notes), tell the teacher what was good and what needs further effort. Don't use statements such as; 'The lesson was nice' [I hear that a lot], 'That was a good lesson', 'great lesson' and 'Nice work'. Suggest to the teacher specific issues and areas to work towards or elements they can focus on replicating. Be truthful [with facts and notes], and don't mislead the teacher into thinking their performance is better than it is. Provide suggestions; 'could you consider doing it this way?' and avoid using words such as 'never' and 'always' As you make your observations and suggestions, allow the teacher to also talk about their lesson and explain particular perspectives. Please point out the impact of the observations, both positive and negative and how the outcome affects their practice, learner achievement and the well-being of the school.

Do not personalise the feedback; distinguish the teacher ('the person') from their actions and avoid making claims akin to personal attacks. Refrain from using language that is harsh, demeaning or accusatory. Let the teacher know, for example, that you noted some errors in the lesson plan but do not tell them that they lack attention to detail or are careless writers. If a reaction to a learner's response to a question was demeaning, dismissive or disrespectful, point it out from the perspective of its effect on the learner(s). Don't tell the teacher they were rude and abusive to the learner

Finally, feedback needs to be given consistently. It should develop to be a regular practice and pedagogical culture for a school, with expectations, performance standards and indicators. Further, feedback should be timely; delivered immediately after a lesson when ideas are still fresh in the minds of the teacher and the observers. Keep it short and focused on the present and the future. This makes the outcomes of the feedback conversations and outcomes more relevant and actionable. A school could develop lesson observation tools or use existing ones from the Teachers Service Commission (TSC) or from CEMASTEAs.

Innovative Pedagogy: Teaching Biology Outdoors

By Thuo Karanja

Walking about where I live interested me in the many herbaceous plants colonising a new heap of soil deposited by a road contractor. Most plants were at different flowering stages, producing fruits or dispersal. These are content areas in Science in primary or secondary school biology. Further, I noted many small animals, especially insects (grasshoppers, ants, crickets, flies, bees etc.), spiders, and millipedes. This is common in many places; turn over stone and see the wonders of an ecological niche.



Thorn Apple (Datura) and the Google Lens App

My mind was taken back to the teaching of biology. How could I use such a site to teach specific concepts? I noted numerous hands-on activities I could plan for learners to experience the fun of learning science. They could observe, identify, classify, draw, demonstrate, explain and exercise many other science process skills. To at least identify some of the plants, I turned to Google Lens. Google Lens is an application that uses artificial intelligence to identify similarities between an object focused on the mobile phone camera to a Google database. This offered me an opportunity for ICT integration in a lesson and also a plan for digital literacy for learners. Using Google Lens enabled me to identify some plants and small animals quickly, I observed. I learned their local and scientific names, general characteristics and the use human beings have used them. Learners could guide to use cameras or phones and photos of some of the plants or parts like leaves and flowers and pictures of the small animals.

However, caution is that a teacher must visit the sites first and note if there are poisonous plants or harmful animals. They also need to provide learners with protective resources like gloves, flying insects catching nets and holding bottles for insects or small animals. In my case, I noted one plant called datura that is poisonous. It has bell-shaped flowers, primarily white and cream. Most of its parts, leaves, roots, bark, flowers, fruit and seeds, are poisonous. Teachers should not allow learners to hand any part of such plants. Others, like stinging nettle, could produce allergic reactions and should be handled in moderation. Some insects could also bite.

There are many sites in our schools that we could use as a powerful resource for learning. Biology lessons conducted out of class could be such fun. It is also environmentally friendly and sustainable as learners could be guided just to make observations of the plants or the animals, discuss them on-site, take photos and leave them in their natural habitats. It is your turn now if you have not seized such an opportunity. Recently, I was in Matuga Girls, Kwale County and found the school's compound a compelling site for teaching biology outdoors. Below are some of the pictures I took as I went around.



Pictures from Matuga Girls, Kwale compound: Caterpillar, millipede, mushroom, flower inflorescence (notice the bee) and a compound leaf

Climate Change: Advancing Government's Tree Growing and Restoration Campaign

By PWanjohi and WMagu

Climate change affects many areas of life globally and represents a unique challenge for society – and a unique opportunity for Science, Technology, Engineering, and Math (STEM) education. Effective climate change adaptation strategies could lead to improved resilience of communities most vulnerable to the impacts of climate change. Resilience to climate impacts and mitigation requires scaled efforts at the government, schools and community levels. The Kenya Government is aware of the dangers of not acting now and, led by the President, has set to plant about 15 billion trees in five years. The Government recently launched the "national tree growing and Restoration Campaign" to increase the tree cover in the Country to 30% by 2032. This will go a long way towards mitigating the adverse effects of climate change and promoting entrepreneurship regarding seedlings production.



A tree should never be this lonely

been appointed to spearhead implementing the directive. CEMASTEА has been donating and leading tree-planting activities through the STEM outreach program. During these STEM outreach interactions, teachers and students are taken through the principles of Education for Sustainable Development (ESD), Climate change and then engage in a tree planting exercise. To inculcate the culture of tree planting, students are trained on effective tree planting; hence they appreciate the importance of tree growing and eventually champion similar actions in their local communities.

In this financial year, the centre has donated more than 5,000 tree seedlings in various schools. This includes Kianyaga High School during the Homecoming Ceremony for

Deputy President His Excellency Hon. Rigathi Gachagua. The school, which had been termed "Kalahari" owing to the area's dry conditions, planted trees to provide the school community with an inviting climate and increase tree cover.

Schools could be the fulcrum around which local communities could start in the development of climate change adaptation strategies. To support the Government efforts, CEMASTEА has committed to establishing a tree nursery and facilitating the planting of at least 10,000 tree seedlings by the end of the 2022/23 financial year. Tree planting has been mainstreamed in all primary Center's operations, and a team of officers has



Students from Shitoli Secondary School in Kakamega planting trees during a STEM outreach activity conducted by CEMASTEА

CEMASTEА plans to establish tree nurseries in at least three (3) schools per County. This is expected to boost the production of quality seedlings that will be planted within the schools and community. The schools will act as resource hubs for educating and sensitising community members on the importance of tree growing and restoration. Every citizen is expected to play a role in achieving this ambitious Government's target. CEMASTEА will continue to play its part in tree growth and repair through Education for Sustainable Development programmes in schools.

Environmental Conservation: The Karen Nyumba Kumi Initiative

The Karen Nyumba Kumi Initiative on Thursday, April 20, 2023, had the drive to increase the forest cover, which is in line with the presidential directive to attain 10% tree cover, and CEMASTEA was not left behind.

Speaking during the launch of the initiative at the Karen Blixen Museum, Mrs Jacinta L. Akatsa - Chief Executive Officer of CEMASTEA, affirmed that the centre has set up tree nurseries and uses the same for the donation of seedlings to schools through an outreach programme. "The tree planting and growing initiative aim at spurring a tree growing culture hence greening the country", she added.



CEMASTEA staff led by the C.E.O, Mrs. Jacinta L. Akatsa, HSC leading the team during the Nyumba Kumi Initiative tree planting event.

The chief guest during the event, Dr Kennedy Ondimu – Director of Environmental Services at the National Environment Management Authority (NEMA), challenged the participants to promote bamboo growing to help achieve Vision 2030 in making Kenya a middle-income economy. "The bamboo trees will not only help address the devastating effects of environmental degradation but also improve livelihoods," he noted. "Can



A section of a tree Nursery at CEMASTEA

we invest in machines to make tooth pics?" he asked. He appealed to the youth and women to take seriously the production of nature-based products.

The National Government Administrative Officer (NGAO), represented by the Karen area Chief, recommended that the nyumba kumi plant more trees with the onset of rains and adjured them to prune old trees to prevent disaster.

Picture Speak: Heeding the Call to Grow Trees



Conscious Communication

By Ann Mumbi



The process of exchanging information or ideas between individuals or groups is called communication. There are several forms of communication, including verbal, nonverbal, written, and visual. Verbal communication involves speaking and listening, while nonverbal communication includes body language, facial expressions, and tone of voice. Written communication consists of writing and reading, and visual communication consists of using images, graphs, and charts. Our communication modes and styles impact how others think and feel and influence their feedback.

Conscious communication shapes your verbal and nonverbal communication styles to influence others more effectively. It's a strategy to ensure your audience is more receptive to your ideas. One tenet of conscious communication is, *'It's not what you say; it's how you say it.'* When one communicates consciously, ideas can get across more effectively and persuasively. Conscious communication enables one to shape and deliver any message to provoke the best response from others. Conscious communication is being emotionally intelligent and prudent to realise how our verbal and non-verbal communication impacts others, ensuring our language is respectful and not emotionally charged. Mindful communication is essential for building relationships, sharing information, and achieving common goals.

“ We may believe that we are good listeners, but listening is more than waiting for your turn to interrupt.” - Simon Sinek



Aesop's Fables

A small apple tree growing in a peasant's garden never blossomed. Each year, the peasant grew increasingly frustrated at the tree's barrenness, and one day he decided to cut it down. The sparrows and crickets which made their nests in its branches begged the peasant not to do it.



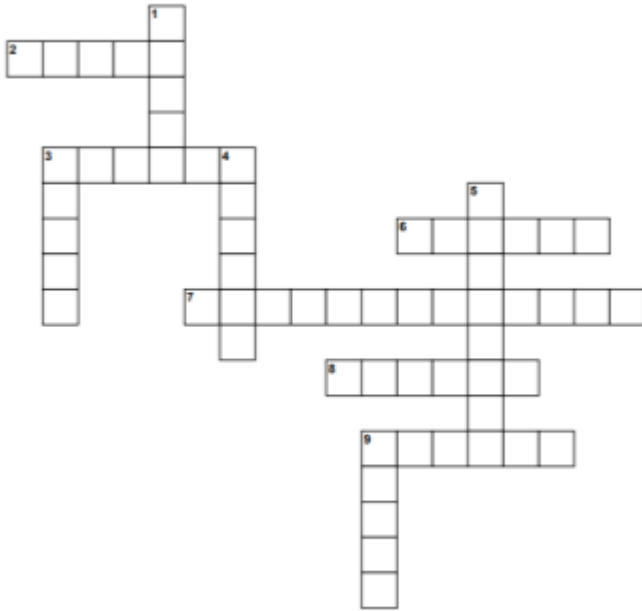
“This tree is valuable,” they said. “Destroy it, and you will force us to find new homes elsewhere. You won't hear our singing and chirping anymore.” The peasant ignored their pleas, grabbed his axe, and began hacking away. But after several strokes, he realised the tree was hollow. More curiously, the tree was dripping a yellow liquid. The peasant looked inside the trunk and found a hive of bees making a large honey store. Delighted with his discovery, the peasant thought: Why, this small tree is more valuable than I realised and worth keeping after all! **Moral:** The actual value is sometimes hidden.

Coffee Break



By Thuo Karanja

Biology Crossword



Down

- [1] Provides support for the flower and stops the flower from drying up
- [3] Contains ovules which produce fertilization
- [4] The male sex cell of the flower
- [5] They carry nutrients to the another
- [9] They are modified to attract insects for cross pollination

Across

- [2] Connects the ovary and the stigma
- [3] Develops into a seed upon fertilization
- [6] Fitted in order to receive pollen
- [7] A process of sexual reproduction
- [8] The part of the flower that contains the pollen
- [9] The female sex cell of the flower

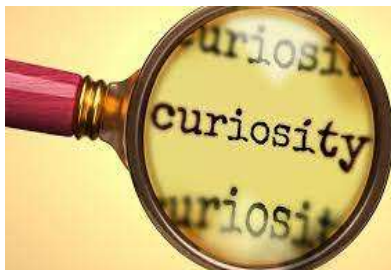
<https://printablecreative.com/crossword/puzzle/biology> ..



<https://www.rd.com/article/biology-jokes/>



<https://web.facebook.com/marshbiofac>



Making Sense of the Senses

Most people believe humans only have five senses and that the only human with more than five senses is Spiderman with his spider sense. Let's burst your bubble and let you know you have more than five senses. We have nine senses: Vision, Hearing, Smell, Taste, Touch, Balance, Temperature, Proprioception and Pain. Huh!

<https://smiletutor.sg/8-mind-boggling-human-biology-facts-to-tell-your-child-to-create-interest-in-biology/>

Book Review

By Esther Nyambura

"The brain constantly adapts to new information and experiences, creating new neural connections and strengthening existing ones."

"The learning brain" is a captivating book that studies how the processes information and how this knowledge can be applied

"...there is no one-size-fits-all approach to education. Every student is unique, with their own strengths, weaknesses, and learning styles."

It explores the cognitive

neuroscience findings and how they can be educational settings.

The book is divided into four sections, each of different aspect of learning, from brain motivation and emotions.

The first section focuses on the development of the brain learning in childhood and adolescence. The second section brain processes and remembers information, and the third emotions and motivation impact learning. The last section implications of this research for education and suggestions for teachers and educators.

The book challenges some of the traditional assumptions about learning and education. For example, the authors argue that the emphasis on testing and assessment in many educational systems can be counterproductive, as it can create anxiety and discourage students from taking risks and exploring new learning areas or ideas. The book proposes the education system focuses on creating a supportive and collaborative learning environment that encourages creativity and experimentation.

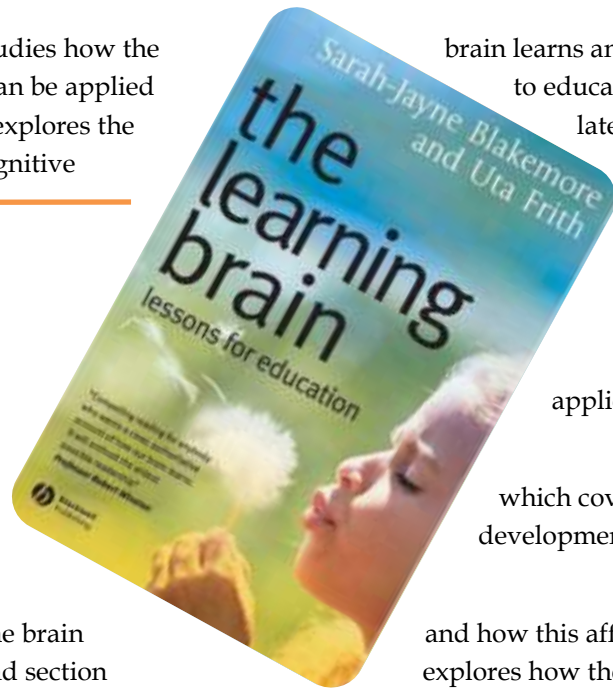
This book has a solid evidence-based foundation where the authors provide a wealth of research studies to support their arguments. It also offers a compelling argument for a more student-centred approach to education and provides practical suggestions for achieving this.

How can we teachers, educators and parents improve the way we educate our children? (Give your suggestions through

<https://padlet.com/enyambura/the-learning-brain-lessons-for-education-me4acnzvh0bq9rca>



overall education system.



brain learns and to education. latest

applied in

which covers a development to

and how this affects explores how the section looks at how discusses the offers practical

assumptions

"The Learning Brain" is an essential book for educators, parents, policymakers and anyone interested

in enriching and improving the learning process and the



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