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REPUBLIC OF KENYA

THE NATIONAL ASSEMBLY

THIRTEENTH PARLIAMENT – FIFTH SESSION – 2026
PUBLIC PETITIONS COMMITTEE

REPORT ON-

CONSIDERATION OF PUBLIC PETITION NO. 19 OF 2025 REGARDING POLICY
AND LEGISLATIVE INTERVENTIONS TO REVERSE THE DECLINE IN UPTAKE
OF SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (STEM)
AND THE NEED TO STRENGTHEN COMPUTER SCIENCE EDUCATION IN THE
COUNTRY



Directorate of Audit Appropriations &
General-Purpose Committees
Clerk's Chambers
Main Parliament Buildings
NAIROBI


 THE NATIONAL ASSEMBLY PAPERS LAID	
DATE: 01 APR 2026	DAY: Wed
TABLED BY:	Hon. Muchangi Karemba Chair, Public Petitions
CLERK-AT-TABLE:	modo Miniam

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ACRONYMS

AI	-	Artificial Intelligence
BBC	-	British Broadcasting Corporation (Microbit platform reference)
CBC	-	Competency Based Curriculum
CBE	-	Competency Based Education
CEMASTEAM	-	Centre for Mathematics, Science & Technology Education in Africa
CPD	-	Continuous Professional Development
CSTA	-	Computer Science Teachers Association
ICT	-	Information and Communication Technology
INSET	-	In-Service Education and Training
JICA	-	Japan International Cooperation Agency
KEC	-	Kenya Education Cloud
KEMIS	-	Kenya Education Management Information System
KESSHA	-	Kenya Secondary School Heads Association
KEPSHA	-	Kenya Primary School Heads Association
KICD	-	Kenya Institute of Curriculum Development
KMO	-	Kenya Mathematics Olympiad
KNEC	-	Kenya National Examinations Council
KSEF	-	Kenya Science and Engineering Fair
MOE	-	Ministry of Education
PWPER	-	Presidential Working Party on Education Reform
SMASSE	-	Strengthening of Mathematics & Science in Secondary Education
STEM	-	Science, Technology, Engineering and Mathematics
TSC	-	Teachers Service Commission

CHAIRPERSON'S FOREWORD

On behalf of the Public Petitions Committee and pursuant to the provisions of Standing Order 227, it is my pleasure and honour to present to the House the Report of the Public Petitions Committee on its consideration of Public Petition No. 19 of 2025 regarding policy and legislative interventions to reverse the decline in the uptake of Science, Technology, Engineering and Mathematics (STEM) and the need to strengthen Computer Science education in the country, submitted by the Computer Science Teachers Association of Kenya.

The Petitioners prayed that the National Assembly, through the Public Petitions Committee, engages the Ministry of Education to establish a National Policy and Funding Framework for STEM and Robotics, and directs the Kenya Institute of Curriculum Development (KICD) to incorporate hands-on learning components in Artificial Intelligence (AI), Robotics, Data Science, and Cybersecurity within the national curriculum.

In considering the Petition, the Committee received submissions from the Petitioner and relevant stakeholders including the Kenya Institute of Curriculum Development (KICD) and the Centre for Mathematics, Science and Technology Education in Africa (CEMASTEA). The Committee also reviewed the relevant legal, policy, and institutional framework governing curriculum development and STEM education in Kenya.

The Committee observed that the Government has undertaken several reforms under the Competency-Based Education (CBE) framework aimed at strengthening STEM learning, integrating digital literacy, and equipping learners with skills relevant to emerging technologies. The Committee further noted that computing-related concepts are integrated within Pre-Technical Studies at the Junior School level and offered as Computer Studies within the STEM pathway at the Senior School level, with elements of Artificial Intelligence, Robotics, Data Science, and Cybersecurity progressively incorporated in the curriculum.

While acknowledging the concerns raised by the Petitioners regarding the need to further strengthen computing education and enhance practical learning in emerging technologies, the Committee found that several of the issues raised are already being addressed through ongoing curriculum reforms and teacher capacity development initiatives being implemented by relevant institutions.

The Committee therefore recommends continued strengthening of STEM education through enhanced teacher capacity development, expansion of digital learning infrastructure, and sustained collaboration among education sector stakeholders to support effective implementation of practical STEM learning across the country.

The Committee further recommends that the Ministry of Education and its relevant agencies continue to monitor the implementation of the curriculum and provide the necessary support to ensure that emerging technology concepts are effectively integrated into teaching and learning processes.

The Committee is grateful to the Offices of the Speaker and the Clerk of the National Assembly for the logistical and technical support provided during the consideration of this Petition. The Chairperson also wishes to thank the Members of the Committee and the Secretariat for their dedication and commitment throughout the process.

On behalf of the Public Petitions Committee and pursuant to the provisions of Standing Order 227, it is my privilege to table this Report before the House for consideration.

HON. MUCHANGI KAREMBA, M.P.
CHAIRPERSON, PUBLIC PETITIONS COMMITTEE

PART ONE

1. PREFACE

1.1 Establishment and Mandate of the Committee

1. The Public Petitions Committee was established under the provisions of Standing Order 208A with the following terms of reference:
 - a) considering all public petitions tabled in the House;
 - b) making such recommendations as may be appropriate with respect to the prayers sought in the petitions;
 - c) recommending whether the findings arising from consideration of a petition should be debated; and
 - d) advising the House and reporting on all public petitions committed to it.
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1.2 Committee Membership

2. The Public Petitions Committee was constituted in October 2022 and comprises the following Members:

Chairperson

Hon. Muchangi Karemba, CBS, M.P.
Runyenjes Constituency
United Democratic Alliance (UDA)

Vice Chairperson

Hon. Janet Jepkemboi Sitienei, M.P.
Turbo Constituency
United Democratic Alliance (UDA)

Hon. Patrick Makau King'ola, M.P.
Mavoko Constituency

**Wiper Democratic Movement-Kenya
(WDM-K)**

Hon. Edith Vethi Nyenze, M.P.
Kitui West Constituency

**Wiper Democratic Movement-Kenya (WDM-
K)**

Hon. Ntwiga Patrick Munene, M.P.
Chuka Igambang'ombe Constituency

United Democratic Alliance (UDA)

Hon. Maisori Marwa Kitayama, M.P.
Kuria East Constituency
United Democratic Alliance (UDA)

Hon. Joshua Chepyegon Kandie, M.P.
Baringo Central Constituency
United Democratic Alliance (UDA)

Hon. Beatrice Kadeveresia Elachi, M.P.
Dagoretti North Constituency
Orange Democratic Movement (ODM)

Hon. Bernard Muriuki Nebart, M.P.
Mbeere South Constituency
Independent

Hon. Biego Paul Kibichy, M.P.
Chesumei
United Democratic Alliance (UDA)

Hon. Peter Irungu Kihungi, M.P.
Kangema Constituency
Maendeleo Chap Chap Party (MCCP)

Hon. John Bwire Okano, M.P.
Taveta Constituency
**Wiper Democratic Movement-Kenya (WDM-
K)**

Hon. Peter Mbogho Shake, M.P.
Mwatate Constituency
Jubilee Party (JP)

Hon. Sloya Clement Logova, M.P.
Sabatia Constituency
United Democratic Alliance (UDA)

Hon. Suzanne Ndunge Kiamba, M.P.
Makueni Constituency
**Wiper Democratic Movement-Kenya
(WDM-K)**

1.3 Committee Secretariat

3. The Public Petitions Committee is facilitated by the following members of the secretariat:

Lead Clerk

Mr. Victor Weke

Principal Clerk Assistant II

Ms. Miriam Modo

First Clerk Assistant

Ms. Kafuyai Wamae

Third Clerk Assistant

Ms. Nancy Akinyi

Research Officer III

Ms. Roselyne Njuki

Principal Serjeant-at-Arms

Mr. Pascal Valerian

Hansard Officer III

Ms. Felistus Muiya

Public Communication Officer

Mr. Benard Toroitich

Third Clerk Assistant

Mr. Clinton Sindiga

Legal Counsel II

Mr. Arkan Mumin

Research Officer III

Mr. Paul Shana

Serjeant-at-Arms

Mr. Collins Mahamba

Audio Officer III

Mr. Calvin Karungo

Media Relations Officer III

PART TWO

2 BACKGROUND TO THE PETITION

2.1 Introduction

4. Public Petition No. 19 of 2025 regarding policy and legislative interventions to reverse the decline in uptake of Science, Technology, Engineering, and Mathematics (STEM) and the need to strengthen computer science education in the country was presented to the House on Thursday, 8th October, 2025 by the Honourable Speaker on behalf of Computer Science Teachers Association of Kenya, a national professional body representing computing educators.
5. The Association is dedicated to ensuring that educators are fully equipped to train the next generation of technology innovators, in alignment with the country's national digital master plan and strategic objectives.
6. The Petitioner highlights a concerning decline in student participation in STEM subjects at a critical time marked by the rapid rise of Artificial Intelligence (AI). Without timely intervention, the nation risks falling behind in global competitiveness, innovation, and its ability to thrive in the Fourth Industrial Revolution.
7. The Petitioner commends the Teachers Service Commission (TSC) for its plan to prioritize STEM subject teachers during the scheduled recruitment of 24,000 intern teachers for junior secondary schools. Further, the Petitioner acknowledges the introduction of coding into the school curriculum in 2022, utilising platforms such as Scratch and Python within the Competency-Based Education (CBE).
8. The Petitioner however raises concerns that dependence on a single introductory tool falls short of preparing students for the complexities of contemporary programming and emerging fields such as AI, Cybersecurity, and Data Science. In addition, the robotics component in the Grade 7-9 curriculum currently lacks substantive hands-on learning opportunities, limiting its effectiveness. The initiative faces significant challenges, including a shortage of trained teachers, inadequate infrastructure, and high resource costs.
9. The petitioner further observed that unlike extracurricular activities such as music, drama, and sports, STEM activities, particularly robotics, the lack of formal financial and policy support, will result in unequal access, especially among marginalized communities. This issue is exacerbated by the Kenya Science and Engineering Fair (KSEF) policy, which mandates the use of proprietary LEGO robotics kits. The high costs of these kits exclude affordable, open-source alternatives like Arduino, Raspberry Pi Pico, and BBC Microbit. This exclusivity fosters elitism, restricts participation, and hinders Kenya's potential to cultivate a locally relevant and scalable robotics culture.
10. These challenges have contributed to a persistent digital divide, limiting the reach and impact of STEM programs, particularly in rural areas.

2.2 Petitioners' Prayer

11. The Petitioners prayed that the National Assembly, through the Public Petitions Committee—
 - (a) Engages the Ministry of Education to establish a National Policy and Funding Framework for STEM and Robotics; and
 - (b) Directs the Kenya Institute of Curriculum Development (KICD) to incorporate hands-on-learning components in Artificial Intelligence (AI), Robotics, Data Science, and Cybersecurity within the curriculum.
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PART THREE

3 STAKEHOLDERS' SUBMISSIONS

3.1 The Petitioners

The Petitioner, Mr. Fred Ondieki, appeared before the Committee alongside members of the Computer Science Teachers Association and submitted as follows -

12. There was decline in student participation in STEM (Science, Technology, Engineering, and Mathematics) at a critical time marked by the rapid rise of Artificial Intelligence (AI). He warned that, without timely intervention, the nation risks falling behind in global competitiveness, innovation, and its ability to thrive in the Fourth Industrial Revolution.
13. He nevertheless commended the Teachers Service Commission (TSC) for its plan to prioritize STEM subject teachers during the scheduled recruitment of 24,000 intern teachers for junior secondary schools. Further, the petitioner acknowledged the introduction of coding into the school curriculum in 2022, utilizing platforms such as Scratch programming language and Python programming language within the Competency-Based Education (CBE) framework.
14. However, he raised concerns that reliance on a single introductory tool is insufficient to prepare students for the complexities of contemporary programming and emerging fields such as Artificial Intelligence, Cybersecurity, and Data Science. Additionally, the robotics component in the Grade 7-9 curriculum currently lacks substantive hands-on learning opportunities, which limits its effectiveness. The initiative also faces significant challenges, including a shortage of trained teachers, inadequate infrastructure, and high resource costs.
15. The petitioner further observed that, unlike extracurricular activities such as music, drama, and sports, STEM activities particularly robotics lack formal financial and policy support, which could result in unequal access, especially among marginalized communities. He added that this issue is exacerbated by the policy governing the Kenya Science and Engineering Fair (KSEF), which mandates the use of proprietary LEGO robotics kits. The high cost of these kits excludes more affordable, open-source alternatives such as Arduino micro-controller platform, Raspberry Pi Pico, and BBC microbit. According to the petitioner, this exclusivity fosters elitism, restricts participation, and undermines Kenya's potential to cultivate a locally relevant and scalable robotics culture.
16. He stated that these challenges have contributed to a persistent digital divide, limiting the reach and impact of STEM programs, particularly in rural areas.

3.2 Kenya Institute of Curriculum Development

The Chief Executive Officer, Kenya Institute of Curriculum Development, Prof. Charles Ong'ondo, PhD, MBS, vide a letter Ref: KICD/CON/M/1/6/VOL. III/59 dated 26th November, 2025, submitted as follows -

17. The Kenya Institute of Curriculum Development (KICD) was established by the Government of Kenya on the 14th January 2013 under an Act of Parliament to develop, review and approve curricula, programmes and curriculum support materials for basic and tertiary education, as well as offering curriculum-based consultancy services in basic and tertiary education and training.
18. The institute has spearheaded curriculum reforms in the country since the introduction of the Competency Based Curriculum (CBC) in 2016. As per the Basic Education Curriculum Framework, Junior School (JS) is a distinct level of education with a broad-based curriculum that is intended to prepare learners for the three pathways at Senior School Education. It is at this level that the learner is expected to identify and nurture their potential and interest in preparation for the different career choices. The phase of learning between Primary and Senior Secondary targets learners in the age bracket of 12 to 14 years.
19. Following the recommendations by the Presidential Working Party on Education Reform (PWPER 2023), KICD has rationalized the number of learning areas and curriculum designs in terms of scope, integration of subjects, learning areas, gaps content overload and overlaps in Basic Education.
20. The petitioners' assertion that the Competency Based Curriculum began integrating computational thinking and coding concepts in 2022 is correct however, the curriculum does not limit the use of Scratch to lower grades or Python to upper grades as alleged. Instead, these tools are presented as suggested learning resources intended to support teachers rather than prescribe specific software or programming languages. Visual programming was introduced for Grade 8 learners in 2024 and extended to Grade 9 in 2025. during this period, applications such as Scratch were used as examples of platforms that help learners grasp programming logic through block-based activities.
21. The petitioner highlights the urgent need for strong computer science foundations to equip learners for a rapidly evolving digital landscape shaped by artificial intelligence, robotics, cyberspace and data science. These priorities align closely with the direction already taken in the current curriculum in Computer Studies Grade 12 as indicated in the table below -

Strands	Sub-Strands
1.0 Foundation of Computer Science	1.7 Emerging Technologies 2.7 Artificial Intelligence (AI) Concepts 3.7 Artificial Intelligence (AI) Implications & Ethics 4.7 Robotics 5.7 Data Analysis and Visualization 6.7 Career Opportunities 7.7 Professional Ethics and Legal Issues in Computing
2.0 Computer Networking	1.4 Network Troubleshooting 2.4 Cybersecurity 3.4 Cloud Computing 4.4 Social and Ethical Issues in Networking
3.0 Software Development	1.4 Data Structure (Arrays, Stack and Queues) 2.4 Web Development II

	Software Development Life Cycle (SDLC) Software Project Management
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Table 1: Extract of Grade 12 Curriculum Design

22. Pioneer Grade 12 will be in 2028 and the areas alleged not to be in curriculum are covered. It is therefore premature to make a judgement on how the curriculum will not help the learner develop AI, Robotics and cybersecurity competences.
23. The Petitioner referred to a subject known as Computer Science, which does not currently exist in the curriculum and may instead be referring to the curriculum reviewed in 2023 during the rationalization process following the recommendations of the Presidential Working Party on Education Reforms (PWPER), 2023. The subject currently offered is Computer Science Studies, which incorporates practical, hands-on skills across various concepts within the curriculum design, rather than focusing solely on robotics. The table below outlines some of the suggested hands-on learning activities that learners are expected to undertake when studying robotics at Grade 12.

Strand	Sub-Strand	Specific Learning Outcomes	Suggested Learning Experiences
1.0 Foundations of Computer Studies	1.4. Robotics	By the end of the sub-strand, the learner should be able to; <ul style="list-style-type: none"> ✓ explain characteristics of a robot, ✓ Describe the compound of a robot, ✓ Assemble the components to make a prototype robot, ✓ Program the prototype robot to make it functional, ✓ Use the prototype robot to perform a task, ✓ Appreciate the importance of robots in society. 	The learner is guided to- <ul style="list-style-type: none"> ✓ Use print or digital resources to search for characteristics of a robot and present to peers; ✓ Relate components of as robot to their functions, ✓ Discuss types of robots and the application areas; ✓ Assemble and program tasks, ✓ Discuss the impact of using robots in the society; ✓ Participate in robotics boot camps, competitions, clubs, societies or workshops to showcase prototype robots built.

Table 2: Suggested hands-on learning activities on Robotics

24. He further clarified that the petitioners' assertion that Computer Science was offered as a stand-alone subject in Grade 7-9 was untrue as there is no stand-alone subject called

Computer Studies at Junior School Grade 7-9, following the rationalization of the curriculum in 2023.

25. The correct position is that Computer Science is not offered as a standalone subject in Grades 7 to 9. Instead, computer-related concepts are embedded within the Pre-Technical Studies subject, in line with the PWPER 2023 recommendations. This introduces learners to foundational computing ideas, including elements of visual programming, without prescribing any specific programming language. Robotics may appear as a suggested learning experience but is not outlined as a distinct learning outcome, allowing flexibility for schools with different resource levels. The curriculum provides suggested learning experiences that teachers may adapt or supplement, and these activities are intentionally hands-on strengthen problem-solving and design skills across disciplines.
 26. At Senior School, the Grade 10-12, curriculum is offered as Computer Studies, focusing on both foundational and advanced modern technology concepts. It retains some legacy content for continuity while integrating contemporary areas such as emerging technologies, networking, and programming beyond introductory levels, ensuring learners develop relevant digital competencies for today's world.
 27. The Committee was informed that the Petition raised concerns regarding public participation in the development of the Senior School curriculum, including the Computer Science component. However, the Kenya Institute of Curriculum Development indicated that it followed the established legal and procedural requirements for curriculum review.
 28. As part of the implementation of the Competency-Based Education framework, KICD invited applications from teachers, teacher educators, and other relevant professionals to serve on curriculum panels. This is the standard mechanism through which subject matter experts, practitioners, and other stakeholders are engaged in the development and review of curriculum designs and support materials. The call for panelists was publicly communicated through official platforms to ensure transparency and broad participation.
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29. Additionally, public participation in curriculum development is not limited to the selection of panelists. Broader public engagement is undertaken through structured stakeholder forums, submission of written memoranda, monitoring of curriculum implementation, and consultations with education sector partners. These processes were undertaken during the review of the Senior School curriculum, and feedback obtained through these channels informed revisions to the curriculum designs, including those relating to Computer Studies.
 30. On whether the KICD undertakes consultations on curriculum review with other stakeholders including parents teachers, and publishers. Typically, the Kenyan government through the MOE and KICD invoices various stakeholders, including parents, teachers, publishers, religious organizations, and industry and education experts, in the process of curriculum review and development. This inclusive approach ensures that the curriculum reflects the needs and perspectives of diverse groups and aligns with the country's educational goals. Here is how the government and KICD undertakes consultations with these stakeholders -

a) Needs Assessment

Needs assessment is the first step in curriculum development. It involves determining the societal needs to be addressed by education programs. In the context of curriculum development in Kenya, various stakeholders play important roles in the needs assessment process. These stakeholders represent different sectors within the education system and the broader community. Here are some key stakeholders involved in needs assessment for curriculum development in Kenya:

- i. *Teachers and Educators*: Teachers and educators are crucial stakeholders in curriculum development. Their insights into the needs and challenges faced in the classroom are invaluable for identifying areas that require attention in curriculum design and implementation. They provide insights into the designs, implementation, and assessment of education program. Teachers of Computer Studies were engaged in proving their insights into the curriculum developed as they were respondents during needs assessment for curriculum reform.
- ii. *School Administrators*: Principals, head teachers, and other school administrators provide perspectives on the operational aspects of curriculum delivery within schools. Their input helps ensure that curriculum development efforts are practical and feasible at the school level.
- iii. *Parents and Guardians*: Parents and guardians are key stakeholders as primary partners in the education of their children. Their input in needs assessment activities helps ensure that the curriculum aligns with societal values, parental expectations, and the needs of learners.
- iv. *Community Representatives*: Community leaders, local organizations, and NGOs represent the broader community interests and priorities. Their involvement in needs assessment efforts ensures that curriculum reflects the cultural, social, and economic contexts of different communities across Kenya.
- v. *Publishers*: provide critical information related to the quality of instructional materials for curriculum implementation.

Engaging these diverse stakeholders in needs assessment processes ensures that curriculum development efforts in Kenya are informed by multiple perspectives and reflect the needs and aspirations of various stakeholders within the education system and society at large

b) Stakeholder Meetings and Workshops

The government through MOE, KICD, and KNEC organizes meetings, workshops, and focus groups discussions with parents, teachers, publishers, and other relevant stakeholders to gather input on curriculum review. These sessions provide opportunities for stakeholders to share their experiences, concerns, and suggestions for improving the curriculum. Over the years, several stakeholder meetings have been held. Some of the stakeholders include Parliamentary and Senate Committees on Education, Religious Organizations, Professional organizations like KEPSHA, KPSA, KESSHA, Trade unions, Universities, Private sector, Civil society etc.

c) Monitoring and evaluation:

The government through MOE, KICD, and KNEC conducts annual monitoring of the implementation of CBC. Surveys, questionnaires, and Focus Group Discussion (FGC) gather feedback from parents, teachers, and publishers on various aspects of the curriculum. This data helps identify areas for improvement and informs the curriculum development process. During these monitoring activities the petitioner has room to provide feedback on the curriculum that will be considered during review.

d) Public Consultation Forums:

The government and KICD organizes public consultation forums where stakeholders can openly discuss proposed changes to the curriculum. These forums encourage transparency and accountability in the curriculum review process and allow for meaningful engagement with the broader community.

e) Feedback Mechanisms:

The government and KICD has established feedback mechanisms, such as online portals or dedicated hotlines, where stakeholders can submit their comments, suggestions, and concerns regarding the curriculum. This ensures that stakeholders have avenues to participate in the review process, even if they cannot attend meetings or workshops in person.

31. The Kenya Institute of Curriculum Development (KICD) submitted that stakeholder involvement in curriculum review remained essential for building consensus, addressing concerns, and ensuring responsiveness to learner and community needs. The Institute emphasized that collaborative dialogue enabled the government to develop relevant, inclusive, and effective curriculum frameworks.
32. Regarding the Senior School curriculum scheduled for 2026 implementation, KICD noted that the framework comprised ten subjects, including four compulsory subjects Mathematics, English, Kiswahili, and Community Service Learning alongside non-assessed subjects such as Physical Education, ICT Skills, and religious instruction, all designed to support holistic learner development.
33. The Institute clarified that emerging technologies had not been overlooked in the curriculum development process as alleged. Artificial intelligence and robotics, it submitted, were progressively addressed within the STEM pathway, with Computer Studies offered as a distinct subject separate from ICT Skills. The curriculum incorporated foundational computing concepts including programming, data systems, digital literacy, and technology ethics, informed by global trends and international benchmarks. KICD suggested that the petitioner may not have accessed the curriculum designs prior to making the allegations.
34. On the petitioner's claim that Computer Studies was offered in Grades 7–9, KICD responded that no such standalone subject existed at that level. Following 2023 curriculum rationalization, computing and ICT concepts had been embedded within Pre-Technical Studies, without explicit robotics learning outcomes as alleged. The Institute confirmed that correspondence referenced in the petition had been received and responded to on 23rd March 2025.

35. In response to the prayer regarding continued strengthening of Kenya's computing education, the Kenya Institute of Curriculum Development (KICD) recognizes the significance of a modern and industry-aligned Computer Studies curriculum and has already put in place mechanisms that address many of the concerns. KICD continues to engage a diverse range of stakeholders during curriculum review, development and implementation, including teachers across the country, industry professionals, teacher educators, and university subject experts. On learning materials, KICD is advancing a blended approach that includes both print and digital formats. Kenya Education Cloud (KEC) is a digital content platform already in use across basic education and it provides opportunities for flexible updates and integration of global digital tools.
36. In response to Prayer that the Kenya Institute of Curriculum Development (KICD) appreciates the interest in ensuring that emerging technologies like Artificial Intelligence (AI), Robotics, Cybersecurity, and Data Science are effectively integrated into the Basic Education curriculum, in alignment with the Kenya National AI Strategy 2025-2030, the institute clarified that the current curriculum integrates these concepts progressively, based on the learner's developmental level, age, and cognitive readiness. At the Junior School level (Grades 7-9), foundational digital literacy and computational thinking are introduced within Pre-Technical Studies. While AI, Robotics, and Data Science are not standalone subjects at this stage, prerequisite skills like problem-solving, visual programming, and digital tool proficiency are embedded to prepare learners for more advanced concepts. At the Senior School level, the ICT and Computer Studies curriculum incorporate elements of AI, Robotics, Cybersecurity, and Data Science. These concepts are covered at a level appropriate for this pre-career stage, equipping learners with practical and theoretical foundations for 21st-century digital competencies. For example;
- a) Computer Studies: Includes strands from Grades 10 to 12, with sub-strands in Grade 12 on Cybersecurity, Emerging Technologies, Artificial Intelligence, Robotics, and Data Analysis and Visualization.
 - b) ICT: The strand in Grade 12 covers Digital Citizenship, including cybersecurity under cyber threats, as well as Emerging Trends in ICT, Artificial Intelligence, and basics in Robotics, Data analysis and visualization under strand called productivity tools sub strand spreadsheets in Grade 11.
37. KICD Basic education curriculum framework, Computer Studies is a subject at senior school categorized under the STEM pathway. ICT is offered as a support subject in senior schools.
38. The Institute further adheres to the international standards, supported by UNESCO-IBE, to review the curriculum every five years and will commence this process when the current education cycle ends in 2028.
39. In conclusion, KICD acknowledges the concerns raised by the Computer Studies Teachers Association (CSTA) regarding the strengthening of STEM and Computer Science education. The Institute is committed to developing a robust, relevant, and dynamic curriculum that equips learners with 21st century skills, including digital literacy and computational thinking. However, upon careful review of the petition, KICD finds that the

issues pertaining to the curriculum are based on several fundamental misapprehensions and are, therefore, not merited.

40. The institute proposed that the petition be dismissed on the following grounds -

a) *The Petition was based on an Outdated Curriculum Framework:* The curriculum concerns raised by the petitioner are anchored in a curriculum structure that had since been comprehensively reviewed and rationalized. The current Competency-Based Curriculum (CBC), including the pathways for Senior School, was finalized and approved in 2023 following Rationalization as recommended by the PWPER. The rationalization exercise meticulously integrated stakeholder feedback, including inputs from subject specialists and teachers, to address the gaps the petition alludes to. Therefore, the issues raised are addressed in the curriculum currently being implemented.

b) *The Curriculum Review Process was Inclusive of Practitioners:* The petitioners narrative assumes a lack of involvement of computer teachers in the development process. This is incorrect. The KICD curriculum development process is highly participatory. The technical teams that developed the Computer Studies curriculum were predominantly composed of practicing teachers of Computer Studies, among other experts.

c) *Curriculum Development Cannot Be Ceded to a Single Interest Group:* While KICD values the input of stakeholder associations like the CSTA, the mandate for national curriculum development rests solely with KICD, as per the KICD Act No. 4 of 2013. Allowing any single interest group to dictate curriculum content would amount to a conflict of interest and undermine the national, inclusive, and balanced approach required for curriculum design as per the international standards. KICD's process ensures that the curriculum serves the broader national interest, not the proprietary interests of any single organization.

d) *The Proposed Pathway Overhaul is Impractical and Prohibitively Costly:* The petitioner's proposal to establish Computer Science as a distinct pathway, separate from the STEM pathway, is not a simple adjustment but a fundamental overhaul of the Senior School Curriculum. Implementing such a change at this advanced stage would necessitate massive re-investment in re-writing curriculum designs, retraining teachers, re-developing learning materials, and re-configuring school infrastructure. This would be an unjustifiably expensive and logistically disruptive undertaking for the taxpayer, with no guaranteed educational benefit over the current integrated STEM approach.

e) *The Petition Prejudges a Curriculum Yet to Be Implemented:* The new Senior School curriculum, which incorporates Computer Studies within the STEM pathway, is scheduled for implementation in the coming academic year 2026 at Grade 10. It is premature and speculative for the petitioner to declare that this curriculum would not produce the right person before it has even been operationalized. KICD holds that the curriculum should be given an opportunity to be implemented, monitored, and evaluated based on empirical evidence from the field, not preconceived notions.

3.3 Centre for Mathematics, Science and Technology Education in Africa (CEMASTEА)

The Chief Executive Officer, CEMASTEА, Ms. Jacinta I. Akatsa, HSC, vide written submissions dated 24th November, 2025, submitted as follows -

41. CEMASTEА traces its establishment to the Strengthening Mathematics and Science in Secondary Education (SMASSE) Project. SMASSE started in 1998 as a pilot project jointly implemented by the Ministry of Education and the Japan International Cooperation Agency (JICA). The projects' purpose was to improve classroom practices of mathematics and science teachers, while the overall goal was to upgrade the capabilities of young Kenyans in mathematics and science.
42. In 2005, Sessional Paper No. 1: A Policy Framework for Education, Training, and Research authorized the establishment of CEMASTEА as a fully-fledged institution for in-service education and training (INSET) for Science, Technology and Mathematics teachers. Consequently, CEMASTEА programmes were captured in the Kenya Education Sector Support Programme (KESSP, 2005-2010) as Investment Programme No. 17.
43. CEMASTEА was established as a body corporate under Legal Notice No. 96 of 2006. In exercise of the powers conferred by section 10 of the Education Act (Cap 211) now repealed by the Basic Education Act 2013.
44. CEMASTEА's core mandate is to develop capacity in STEM education through training of curriculum implementers and research, conduct continuous Professional Development (CPD) programmes for curriculum implementers, develop and disseminate innovative teaching and learning materials in STEM subjects, promote the use of Information and Communication Technology in education and serve as a regional centre of excellence in mathematics and science education.
45. The assertion that Kenya is experiencing low student enrollment as in STEM as a result of inadequate facilities, gender disparities, and an overly theoretical curriculum does not reflect current national data nor the reforms being implemented under the Competency Based Education (CBE) as stipulated below:
46. The Basic Education Curriculum Framework (BECF, 2017) envisioned that at least 60% of senior school learners would pursue the STEM pathway. This informed national planning, including the design of the senior school structure and the implementation of the pathway-based progression. According to data from the Kenya Education Management Information System (KEMIS), 50.5% of learners transiting to senior school in 2026 have opted for the STEM pathway. These numbers are expected to rise in the subsequent years as interventions continue to be implemented by relevant players. This should demonstrate a steady rise in learner interest and participation in STEM-related subjects.
47. According to the KPSEA 2023 Report, 90.59% of Grade 6 learners in Mathematics and 77% in Science and Technology achieved performance levels ranging from Approaching Expectations to Exceeding Expectations. This strong performance indicates that learners are already demonstrating positive dispositions toward STEM which are reflected in their

ability to meet or closely approach expected competency levels. The trend remained consistent in 2024, where 77.6% of learners in Mathematics and 77% in Science similarly demonstrated acquisition or near acquisition of the expected competencies. This continuity across years suggests that learner motivation and positive attitudes toward STEM subjects are stable and are translating into sustained performance.

48. These improvements in STEM subjects, alongside gains in other subjects, point to a broader pattern of strengthened learner engagement and motivation. Collectively, these correlations suggest that Kenyan learners are developing and sustaining positive attitudes toward STEM disciplines, with their year-on-year performance directly affirming their growing participation and engagement.
49. On the issue stating that the curriculum remains overly theoretical is inconsistent with the ongoing shift to CBE, the CEO stated that CBE focuses on what learners can do rather than what they merely know. CBE centres on the practical demonstration of skills, attitudes, and knowledge in real-life contexts. Its learning outcomes are action-oriented, requiring learners to apply concepts through tasks, projects, problem-solving activities, and performance-based assessments. The curriculum deliberately integrates authentic learning experiences, such as project-based learning, inquiry, experiments, community engagement, and the use of locally available materials to anchor learning in real situations. Assessment in CBE is also practical, emphasizing continuous observation, portfolios, demonstrations, and real-world tasks rather than written tests alone.
50. Under the Senior School framework, all learners are required to pursue one of three pathways: STEM, Social Sciences, or Arts and Sports Science, each grounded in practical, project-based, and problem-solving pedagogies. Mathematics has also been presented as either Core Mathematics (STEM pathway) or Essential Mathematics (Social Sciences and Arts pathways), ensuring universal numeracy and enhancing the relevance of STEM across pathways.
51. With regard to gender disparities, national examination data reflect near gender parity in overall candidature, with a few gaps now arising primarily in subject selection. To address this, the Government and partners such as KNATCOM-UNESCO have instituted deliberate interventions, including Girls' STEM-ICT Camps of Excellence and gender-responsive teacher mentorship initiatives aimed at dismantling stereotypes and supporting retention of girls in STEM.
52. CEMASTEAs Programmes that promote STEM: CEMASTEAs, pursuant to its mandate, undertakes structured interventions that directly respond to the concerns raised. These interventions focus on up-skilling, and continuous capacity development of curriculum implementers, and implements programs that inspire learners in STEM education. CEMASTEAs thereby strengthens the quality, practicality, and attractiveness of STEM education as follows:
 - a) Retooling and Continuous Capacity Development of curriculum implementers**
 - i. To ensure the realization of Government policy of 60% transition to the STEM pathway, CEMASTEAs conducts capacity building programmes that targets an annual average of

25,000 curriculum implementers to enhance their pedagogical content knowledge. Specifically, the training covers interpretation of curriculum designs, inquiry-based STEM pedagogy, ICT integration in the learning process, assessment, and how to develop and source for teaching learning resources. These trainings are aligned with the CBE framework and are aimed at improving classroom practice, making STEM practical and engaging for learners.

- ii. CEMASTEА conducts workshops to support pedagogical leaders (school principals and heads of institutions) to create awareness of their schools' potential to offer a STEM pathway under the CBE system. In April and June 2025 CEMASTEА trained 9,362 Senior School Principals on the transition to the STEM Pathway under CBE. This initiative together with nation-wide STEM outreach activities has contributed to expanding the number of students/learners taking the STEM pathway under the CBE system.
- iii. Virtual Laboratories: Technology presents teachers with unique opportunities to enhance the teaching and learning of STEM. By integrating innovative tools such as virtual laboratories, teachers can foster a more engaging, interactive, and effective learning environment. CEMASTEА with support from the World Bank has developed virtual laboratory platforms and trained 9,230 junior school teachers on how to use virtual labs in the classroom. This platform also enables learners to conduct simulations and interactive experiments. These tools mimic real-world scientific environments and ensure that practical STEM learning can occur even where physical infrastructure is limited.

b) CEMASTEА STEM Programme Initiatives

CEMASTEА runs targeted learner-facing initiatives such as; the STEM Model school programme, STEM outreach programmes, holiday boot camps on robotics, coding, AI, 3D modelling and printing, Girls' STEM mentorship activities, and the Kenya Mathematics Olympiad. These initiatives are designed to make STEM visible, exciting, and relatable to learners, thereby boosting enrolment and addressing gender disparities.

- i. STEM Outreach Programmes: CEMASTEА conducts nationwide STEM outreach activities in schools aimed at creating awareness of the broad opportunities available within STEM fields. These outreach programmes include exhibitions, demonstrations, and motivational talks that expose learners to practical STEM applications and help cultivate early interest in STEM.
- ii. Holiday STEM Boot Camps: The Centre organizes STEM boot camps during school holidays, offering learners hands-on exposure to robotics, coding (including Python and C++), 3D modelling and printing, engineering design, and creative problem-solving. These camps provide an immersive learning environment that nurtures curiosity, innovation, and practical skills beyond the formal classroom setting. Further, it provides opportunities for parental involvement and engagement.
- iii. Kenya Mathematics Olympiad (KMO): A purposeful and highly structured mathematics enrichment initiative aimed at fostering a positive mathematics culture in schools. The Olympiad challenges learners to engage in advanced problem-solving,

stimulates mathematical curiosity, and identifies high-potential talent. Successful participants benefit from incentives such as opportunities to represent Kenya in international mathematics competitions, access to scholarship pathways, and enhanced prospects for competitive university placements in STEM- related programmes.

- iv. School Visits to CEMASTEIA: Schools across the country visit CEMASTEIA, where learners interact with specialized STEM facilities, virtual laboratories, robotic equipment, and innovation spaces. These visits enable students to experience real-world STEM environments and expand their understanding of STEM careers and technologies.
 - v. Girls' STEM Clubs and Mentorship Programmes: To address gender disparities in STEM, CEMASTEIA is working on a framework for Girls' STEM Clubs and targeted mentorship programmes that build confidence, dismantle stereotypes, and provide role models for female learners. These initiatives are designed to promote equitable participation and ensure that girls are supported to pursue and excel in STEM pathways and careers.
 - vi. The STEM Model Schools Programme: CEMASTEIA is working with selected 103 schools spread across all the 47 counties to model STEM education. Each county has at least two STEM Models. Others are distributed across all the eight regions. Teachers and Principals of these schools are trained on the integrated approach to STEM education and principles and practice of inviting school climate. The schools also receive specialized STEM equipment.
 - vii. The Senior School under CBE will receive its first cohort of learners transiting from Junior School in 2026. According to data referenced from the Kenya Education Management Information System (KEMIS), the learners' interest in the different pathways is distributed as follows: Arts and Sports Science - 121,080 learners; Social Sciences - 437,657 learners; and STEM - 569,967 learners (translating to 50.5%), out of a total of 1,127,704 learners. These numbers are encouraging and demonstrate a sustainable level of interest in the STEM pathway and therefore negates the assertions by the petitioner that there is low student enrolment in STEM subjects. Given that this is the inaugural cohort, the Centre cautions that any conclusion by the petitioner suggesting a decline in STEM enrolment is unsubstantiated by empirical evidence. On the contrary, the magnitude of the uptake recorded in this first year provides a strong foundation for exponential growth in subsequent cohorts as the pathway system stabilizes and associated reforms continue to mature.
53. On the issue regarding the need for structured professional development for teachers on modern computing and AI pedagogical skills as referenced in the petition, CEMASTEIA wishes to bring to the committees' attention what it is doing on the challenges cited by the petitioner on equipping teachers with modern computing and AI pedagogical skills. Further, CEMASTEIA partnered with Raspberry Pi, Microsoft, and Intel to train its staff on AI in education, computing and code clubs. Through these partnerships the Centre developed a training module and continues to capacity build curriculum implementers on AI in education, computing and code clubs to strengthen STEM pedagogies and enhance their capacity in emerging technologies. This initiative ensures alignment with CBE and

supports the integration of digital literacy, innovation, and future skills across all learning areas.

54. Regarding Exclusive use of proprietary Robotics Kits during the Kenya Science Engineering Fair (KSEF) as referenced in Material Concern No. 39-45 of the petition, the CEO clarified that the assertion that CEMASTEAM together with the Ministry of Education and other stakeholders from KSEF dictate or exclusively prescribe the use of proprietary LEGO robotics systems (i.e Mindstorms and LEGO Education SPIKE) in the robotics category, to the exclusion of more affordable or open-source alternatives, was factually inaccurate and not supported by any evidence.
55. KSEF is an annual school event organized by the Ministry of Education in collaboration with other stakeholders. This event runs from the sub-county level to the National level and is open to all schools providing an equal opportunity for students to participate. There are currently 13 categories in STEM disciplines in which the students compete. Robotics was one of the categories. The introduction of the robotics category by KESF in 2019 which followed a successful countrywide robotics challenge organized by CEMASTEAM in 2018 among the STEM Model Schools. The aim was to promote creativity, innovation and problem solving through hands-on learning among learners. CEMASTEAM also successfully advocated for the integration of robotics as the 13th Competitive Category in the Kenya Science and Engineering Fair (KSEF).
56. CEMASTEAM's role in the Kenya Science and Engineering Fair (KSEF) is to provide ongoing technical support to KSEF through provision of qualified judges. The Centre does not prescribe, compel, or otherwise direct participating schools on the specific robotics kits they must procure or utilize. Kit selection remains solely within the discretion and financial capability of individual schools.
57. CEMASTEAM's previous engagement with LEGO kits arose from a partnership initiative at the inception of the robotics competition. Under this initiative, LEGO partnered with CEMASTEAM, and trained its staff on robotics education, who in turn cascaded the training to teachers in STEM model schools.
58. CEMASTEAM donated LEGO kits to STEM model schools to introduce robotics education. This donation was neither accompanied by any obligation on the part of the schools to continue using LEGO kits nor intended to restrict them from procuring other alternative kits.
59. Regarding the assertion of vendor exclusivity in robotics competitions, CEMASTEAM wishes to state categorically that KSEF defines competition rules which are standardized based on sound scientific principles, technology-agnostic and non-discriminatory. The evaluation criteria focus on problem solving capabilities, innovation and programming efficiencies.
60. The Centre further wishes to humbly submit that all schools, whether STEM model schools or otherwise, retain full liberty to acquire robotics kits that are suitable and affordable to them. KSEF regulations do not restrict any robotics kits in the competition, and no school is in any way disadvantaged for opting for non-LEGO or open-source alternatives.

61. It is therefore important to bring to the Committee's attention that CEMASTEА's mandate within the KSEF framework pertains to judging and quality assurance of the competition process. The procurement of robotics equipment lies squarely within the purview of individual schools and is not a function exercised by the Centre.
 62. In conclusion CEMASTEА hopes that it has adequately responded to the material concerns raised that specifically regard its mandate. CEMASTEА remains steadfast in its commitment to continuously enhance teacher professional development including emerging technologies e.g. Robotics, AI, Coding, strengthening strategic partnerships with industry, academia, and development partners and supporting the Government's digital transformation agenda as outlined in Vision 2030 and the Digital Economy Blueprint.
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PART FOUR

4. COMMITTEE OBSERVATIONS

63. Upon hearing from the Petitioner and other stakeholders, the Committee observed that—
- (i) Petitioner's concerns regarding the strengthening of STEM education and enhancement of computing skills, aligned with national objectives of promoting digital transformation and innovation.
 - (ii) The Competency-Based Education framework had introduced significant reforms integrating digital literacy, computational thinking, and emerging technologies. Computer-related concepts were embedded within Pre-Technical Studies at Junior School level. Computer Studies was offered as a distinct STEM pathway subject at Senior School level.
 - (iii) On Curriculum content and timing, the Committee noted stakeholder evidence indicating that Artificial Intelligence, Robotics, and Data Science concepts were progressively incorporated at appropriate learning levels. However, misinterpretations about the current curriculum framework persisted.
 - (iv) On Learner Uptake and Programmes, CEMASTEAs data demonstrated significant learner interest. Approximately 50.5% of transitioning students had selected the STEM pathway attributed to ongoing CEMASTEAs initiatives like teacher training programmes, STEM outreach activities, virtual laboratories, learner-focused boot camps, and mentorship programmes.
 - (v) Notwithstanding ongoing reforms, the Committee recognized persistent challenges which included disparities in access to learning resources, teacher capacity gaps in emerging technologies and infrastructure constraints in under-served regions.
 - (vi) Sustained policy support, investment in teacher capacity development, and expanded access to digital learning resources will be necessary to sustain and strengthen the uptake of STEM education nationwide.

PART FIVE

5. COMMITTEE RECOMMENDATIONS

Pursuant to the provisions of Standing Order 227, the Committee responds to the petitioners as follows -

- (i) On the prayer that the Committee engages the Ministry of Education to establish a National Policy and Funding Framework for STEM and Robotics; **the Committee notes that the Government has undertaken significant reforms under the Competency-Based Education framework aimed at strengthening STEM education. However, to enhance these efforts, the Committee recommends that the Ministry of Education (MoE), in collaboration with the National Treasury, Kenya Institute of Curriculum Development (KICD), and the Centre for Mathematics, Science and Technology Education in Africa (CEMASTEА), should strengthen policy coordination and resource allocation towards the expansion of STEM education programmes, including investment in infrastructure, digital learning resources, and teacher capacity development, particularly in underserved and marginalized areas.**

- (ii) On the prayer that the National Assembly directs the Kenya Institute of Curriculum Development (KICD) to incorporate hands-on learning components in Artificial Intelligence (AI), Robotics, Data Science, and Cybersecurity within the curriculum; **the Committee notes the submissions by the Kenya Institute of Curriculum Development (KICD) that emerging technology concepts are progressively integrated within the existing curriculum. The Committee therefore recommends that the Kenya Institute of Curriculum Development (KICD), in collaboration with the Ministry of Education, CEMASTEА, and the Teachers Service Commission (TSC), continues to strengthen the practical implementation of the Computer Studies and ICT curriculum by promoting experiential learning approaches and supporting continuous professional development programmes for teachers in emerging technology fields.**

Signed:.....

Date: 01/04/2026.....

THE HON. MUCHANGI KAREMBA, M.P.
CHAIRPERSON, PUBLIC PETITIONS COMMITTEE

ANNEXURES

Annex 1: The Adoption List

Annex 2: Public Petition No. 19 of 2025 regarding policy and legislative interventions to reverse the decline in the uptake of Science, Technology, Engineering and Mathematics (STEM) and the need to strengthen Computer Science education in the country, submitted by the Computer Science Teachers Association of Kenya.

Annex 4: Minutes of proceedings





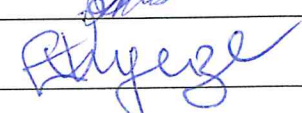


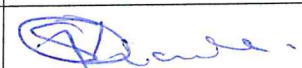
PUBLIC PETITIONS COMMITTEE

ADOPTION LIST

(i) Consideration and adoption of the Report on Public Petition No. 11 of 2025 by Hon. Rahim Dawood, MP, regarding the compensation and land allocation to Mau Mau War Veterans

We, the undersigned, hereby affix our signatures to this Report to affirm our approval:

DATE: 18/31/2026

	HON. MEMBER	SIGNATURE
1.	Hon. Muchangi Karemba, CBS, M.P. (Chairperson)	
2.	Hon. Janet Jepkemboi Sitienei, CBS, M.P. (Vice Chairperson)	
3.	Hon. Patrick Makau King'ola, M.P.	
4.	Hon. Beatrice Kadeveresia Elachi, CBS, M.P.	
5.	Hon. Joshua Chepyegon Kandie, M.P.	
6.	Hon. Maisori Marwa Kitayama, M.P.	
7.	Hon. Edith Vethi Nyenze, M.P.	
8.	Hon. Patrick Ntwiga Munene, M.P.	
9.	Hon. Paul Biego Kibichy, M.P.	
10.	Hon. (Eng.) Bernard Muriuki Nebart, M.P.	
11.	Hon. Peter Mbogho Shake, M.P.	
12.	Hon. Suzanne Ndunge Kiamba, M.P.	
13.	Hon. John Bwire Okano, M.P.	
14.	Hon. Sloya Clement Logova, M.P.	
15.	Hon. Peter Irungu Kihungi, M.P.	