

GEC ADMINISTRATION –A Teacher's perspective

GEC MASTER TRAINERS

13 April 2026

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PRESENTATION OUTLINE

1. Introduction
2. GEC Implementation
3. Integrated project
4. 21st century skills
5. Inclination
6. Way forward 2026
7. Importance for a Technical School, challenges and recommendations

1. Introduction



School Information

Name of the School	KIMBERLEY TECHNICAL HIGH SCHOOL
Province and District	NORTHERN CAPE FRANCES BAARD
School Type (SoS/VOC/Mainstream)	VOCATIONAL
Total number of learners i.e Gr 8-12	877
Total number of grade 9 classes	6
Number of learners per class	±30
Total number of teachers	8
GEC Participation	2024 and 2025



KIMBERLEY TECHNICAL HIGH SCHOOL

GEC & 3 STREAM MODEL



Report By
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PRINCIPAL
Winner of the
National Teaching Awards 2025
Excellence in Secondary
Leadership



ENGINEERING
SCHOOL OF SPECIALIZATION



TECHNICAL
FOCUS SCHOOL



IMPLEMENT VOCATIONAL
3 STREAM MODEL



GEC IMPLEMENTED SINCE 2024

WE PREPARE LEARNERS FOR THE REAL WORLD



basic education
Department:
Basic Education
REPUBLIC OF SOUTH AFRICA



Types of learners



Learners who choose the academic route
Grade 10-12



Learners who move on to TVET after Grade 9



Learners with special needs should be at school of skill



Curriculum Adaptation



Replaced EMS,
Creative Arts and
Technology



Introduced Civil,
Electrical and
Mechanical
Technology



Shift to
engineering and
applied learning



School Table and Curriculum

For school of Skills and Vocational Schools

- The number of subjects offered
- How the school timetable is designed (you can put a copy of the timetable and speak to it)
- Curriculum being followed

GEC Implementation



1. GEC Implementation

Brief Journey with GEC

The school initially implemented the GEC using a model aligned to **Technology, Mathematics, and Natural Sciences**. However, in the previous year, this was revised to a more contextually relevant approach focusing on **Vocational, Mathematics, and Natural Sciences**.

This shift aimed to better align the curriculum with the school's technical focus. The implementation initially included **Civil and Electrical disciplines**, which strengthened the integration of theoretical knowledge with practical application.

Despite initial challenges, particularly related to **time constraints and coordination**, the new approach proved more meaningful for learners. Building on this progress, the school plans to expand the GEC to **include Mechanical disciplines**, ensuring a more inclusive and comprehensive technical offering.

2025 GEC Implementation Reflections



Administration of Inclination

Briefly describe how you implemented the inclination at your school and in your class i.e



5. Inclination

Administration of the inclination assessment

- The inclination assessment was **administered alongside project activities**

Adaptation of the 21st century skills tools to make user friendly

- Tools were adapted to be **clear, simple, and accessible to learners**
- Results were used to **guide teaching strategies and learner support**

GEC Integrated Grade 9 Project 2025 (Learner's Workbook)

- Scenario 2 was selected for Civil Technology.
- Scenario 3 was selected for Electrical Technology.
- Both Scenarios were integrated into one project for the year 2025.



Civil Technology Cylindrical House



MATERIALS REQUIRED:

- Wooden Base Plate
- PVC Pipe (160mmx100mm)
- Ply Wood for Rooftop
- Cut out Wooden Strips for Window Frame
- Hinges for Door

Electrical Technology – Alarm System



MATERIALS REQUIRED:

- Double AA Battery.
- Electrical Wire.
- Switch, used money clip.
- A sound buzzer.
- LED.

Integrated Project – Civil/Electrical



Final Demonstration of Integrated Project.



3.Integrated Project

Process	Procedure
Writing	Provided learners with simplified instructions and clear expectations Broke the project into structured phases with deadlines Used scaffolding strategies to support learner understanding
Booklets	Developed a single, consolidated booklet for all subjects Organized content into clearly defined subject sections Ensured alignment and coherence across subjects
Marking	Implemented a common assessment rubric across subjects. Shared marking responsibilities among educators. Conducted moderation processes to ensure fairness and consistency.



3. Integrated Project

Challenge	How it was addressed
Limited time to effectively implement all components of the project	Adjusted the scope to ensure manageability within available time
Difficulty aligning academic requirements with technical/vocational subjects	Integrated subjects around common technical themes (Civil & Electrical projects)
Coordination between multiple subject teachers	Strengthened collaborative planning among educators
Learners initially struggled to integrate theory with practical tasks	Streamlined the project to focus on practical, real-life technical applications

3.Integrated Project

Conclusion / Way Forward

The introduction of the Vocational GEC has improved the relevance of learning in a technical school context. Moving forward, the inclusion of **Mechanical disciplines** will further strengthen integration, provide broader learner exposure, and enhance the overall effectiveness of the integrated project.

4. 21st Century Skills

Administration of the 21st century skills

- Skills were **embedded into the Integrated Project tasks** rather than taught separately
- Teachers incorporated skills such as **critical thinking, collaboration, and communication** into daily lessons
- Assessment included both **content knowledge and skill application**

Adaptation of the 21st century skills tools to make user friendly:

- Simplified 21st century skills tools to make them **user-friendly and relevant**
- Focused on **practical application within Civil and Electrical contexts**
- Adjusted language and tasks to suit **technical school learners**
- Planning to further adapt tools to include **Mechanical disciplines** going forward

4. 21st Century Skills

Challenge	How it was addressed
Limited time to implement 21st century skills within an already full technical curriculum	Integrated skills into existing vocational projects (Civil & Electrical) instead of treating them as separate tasks
Learners struggled to understand abstract skills like collaboration, critical thinking, and problem-solving	Used practical, hands-on technical tasks to demonstrate these skills in real-life contexts
Difficulty aligning 21st century skills tools with technical subjects	Adapted tools to focus on technical problem-solving, design thinking, and real-world applications
Teacher capacity and consistency in applying 21st century skills	Promoted collaborative planning and sharing of best practices among teachers
Learner engagement and participation	Encouraged group-based projects and peer collaboration to build communication and teamwork skills

CURRENT CONSTRAINTS TO RUN GEC / 3 STEAM MODEL EFFECTIVELY

- Not enough **textbooks** are available for each grade 9 learner.
- Not enough **workshop space and equipment** is available for grade 9 learners to effectively do their practical tasks.
- No **materials and consumables** available for grade 9 learners to perform practical assessments.
- Currently we are using workshops which were built and designed for **grade 10 – 12 and using equipment**, materials and consumables which are budgeted and allocated to gr 10 – 12.
- Last year's visit from DBE, it was indicated that DBE will **provide resources** to the school.
- **New workshops are in the process** of implementation to specifically accommodate the grade 8 & 9 learners to be able to do the 3-stream model of vocational subjects and eradicate the constraints mentioned above.

6. Way forward for 2026



GEC & PROJECT-BASED LEARNING

Integrating Subjects for Real-World Solutions

GRADE 8 & GRADE 9

All Learners Should Do Integrated Tasks



Builds Foundation

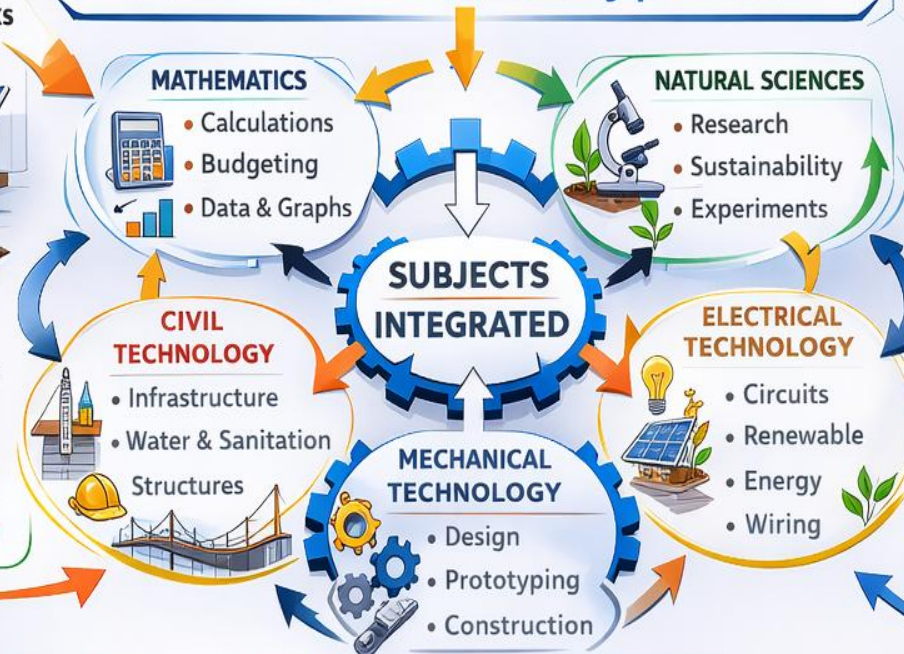
- Critical Thinking & Problem Solving

Develops Technical & Entrepreneurial Skills Early

Prepares for **Grade 9 Projects**

DRIVING QUESTION:

“How can we design and build a **sustainable solution** to solve a real-world **community problem**?”



GEC OUTCOMES

- Real-World Problem Solving
- Collaboration & Teamwork
- Critical & Creative Thinking
- Technical Competence
- Career Readiness

ENTREPRENEURIAL SKILLS

(Even without EMS)

- Innovation
- Resource Management
- Financial Literacy
- Leadership & Communication

IMPLEMENTED FROM GRADE 8 → GRADE 9

Both Grades Should Engage in **Integrated Tasks** for **Maximum Impact**

- ✓ Develops Skills Early
- ✓ Prepares for TVET & Careers
- ✓ Solves Community Challenges

PATHWAY



“Building **Technically Skilled, Innovative & Entrepreneurial** Learners for the Future”

Integrated Technical Vocational Project: “How “How can we build an affordable protective & protective & secured safety system for your your house?”



Project Overview: Three Integrated Scenarios 2026

Our integrated project connects **three distinct technical disciplines** through practical, real-world challenges. Each scenario addresses authentic problems while demonstrating how different technical fields complement and enhance each other in modern engineering solutions.

Mechanical Technology

Design and construct **devil fork fork fence and a hydraulic security gate** using syringes and household materials. Focus on mechanical motion, hydraulic systems, and structural stability.

Civil Technology

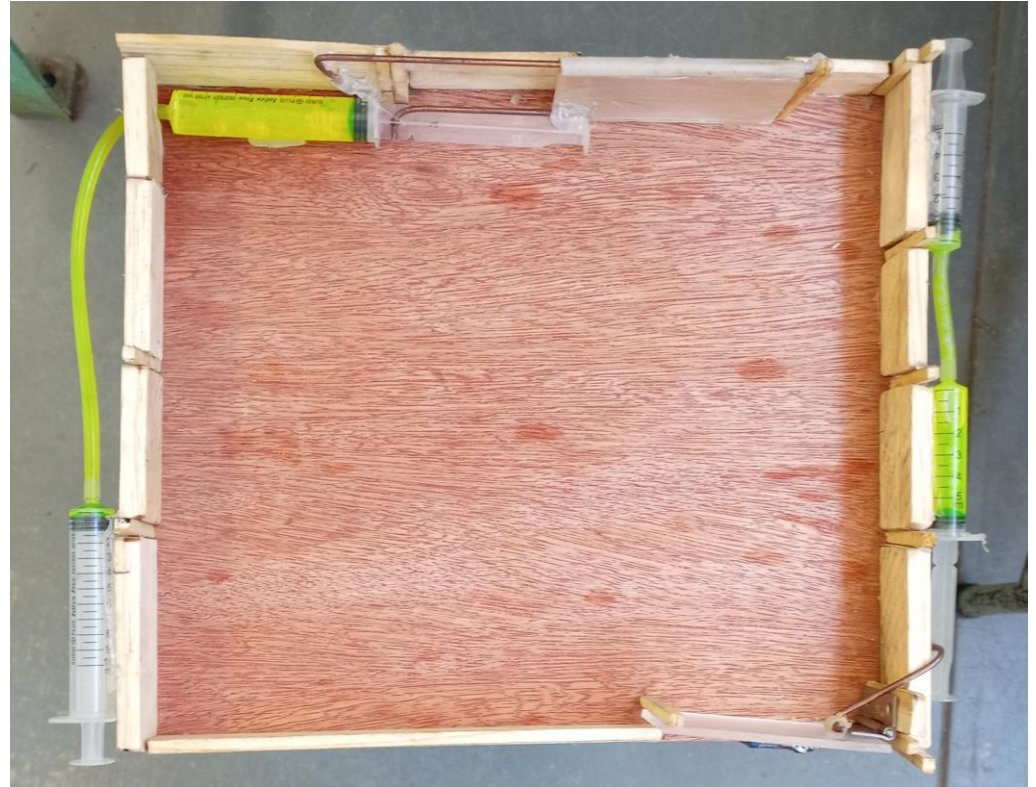
Build a **protective (burglar bars in bars in windows)** housing structure for electronic circuits that safeguards components from environmental factors while maintaining accessibility for maintenance.

Electrical Technology

Create an **emergency power system system with battery** backup to ensure door alarm functionality during power outages, focusing on circuit design and energy management.



Mechanical Technology Devil Fork Fence & Hydraulic Gate (NEW)



Way Forward

Way Forward: Implementation of GEC

The school will implement the GEC through a structured and contextually relevant approach that strengthens integration across **Vocational, Mathematics, and Natural Sciences**, while expanding to include **Mechanical disciplines**.

This approach will ensure that the GEC is **practical, manageable, and relevant**, while improving learner understanding and performance in a technical school environment.

Way Forward

Integrated Project

- Design **streamlined, time-managed projects** aligned to Civil, Electrical, and Mechanical contexts
- Ensure **clear project phases, guidelines, and deadlines** for effective implementation
- Strengthen **teacher collaboration** to improve integration across subjects
- Use a **common rubric and moderation process** to ensure consistency in assessment

Way Forward

21st Century Skills

- Embed skills such as **critical thinking, collaboration, communication, and problem-solving** within project-based tasks
- Use **practical, real-world technical activities** to develop these skills
- Adapt tools to be **simple, user-friendly, and relevant** to a technical school context
- Promote **group work and peer learning** to enhance learner engagement

Way Forward

Inclination

- Administer inclination assessments **alongside project activities**
- Use simplified tools to ensure **accessibility and understanding for all learners**
- Analyze results to **inform teaching strategies and learner support**
- Continuously refine tools to align with **technical subject contexts**

Way Forward

Curriculum

- Align GEC implementation with **CAPS requirements** while integrating vocational subjects
- Strengthen links between **theory (Mathematics & NS)** and **practical application (Vocational subjects)**
- Ensure **balanced coverage of content and skills** within available time
- Expand curriculum integration to include **Mechanical alongside Civil and Electrical**

Way Forward

Curriculum

- Align GEC implementation with **CAPS requirements** while integrating vocational subjects
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6. Additional Information



7. Importance for a Technical School

TVET Integration & Articulation

GEC ENABLES STRUCTURED
TRANSITION INTO TVET COLLEGES



LEARNERS ENTER AT TVET LEVEL 1
AFTER GRADE 9



ALIGNED TO VOCATIONAL STREAM
OF THE THREE-STREAM MODEL



Structured Progression Pathway



Entry: TVET Level 1
(Post-GEC)



Entry: TVET Level 4
(Post-Matric)



Completion of
NC(V) qualifications



Direct pathway into
skilled employment



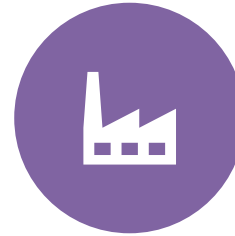
Impact on Learners and Economy



REDUCES
DROPOUT
RATES
AFTER
GRADE 9
AND 10



CREATES
ALTERNATIVE
PATHWAYS
BEYOND
ACADEMIC
ROUTES



DEVELOPS
ARTISANS,
TECHNICIANS
AND
ENGINEERS



SUPPORTS NDP
2030 AND
SKILLS
DEVELOPMENT
PRIORITIES



Strategic Value for South Africa

STRENGTHENS LINK BETWEEN SCHOOL,
TVET AND INDUSTRY

PROMOTES EMPLOYABILITY BUT
ENTREPRENEURSHIP?

BUILDS A STRONG TECHNICAL SKILLS
PIPELINE

POSITIONS LEARNERS FOR REAL-WORLD
CAREERS



Strengths of GEC Implementation

STRONG LEADERSHIP AND VISION

ALIGNMENT WITH NATIONAL AND GLOBAL
POLICIES

EARLY EXPOSURE TO ENGINEERING

IMPROVED LEARNER OUTCOMES



Key Challenges

Draft vocational subjects not standardised



CAPS misalignment with GEC approach



Limited textbooks and teaching resources



Teacher training needs

Resource Challenges

Limited workshop
equipment

Need for modern
laboratories

Infrastructure constraints



Recommendations to DBE

Finalize

- Finalize vocational curriculum

Align

- Align CAPS with GEC

Provide

- Provide textbooks and resources

Strengthen

- Strengthen teacher development

Promote

- Promote entrepreneurship

Conclusion



GEC has transformed teaching and learning



Improved academic performance and learner pathways



Producing engineers, innovators and leaders



Kimberley Technical High School as a national model

Every child is a National Asset

Thank you!

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