🌟 Global Edge Academy: Holiday Innovation Program Curriculum

🌍 Program Overview

At Global Edge Academy, we believe that Africa's future lies in the hands of young innovators who are equipped not just with knowledge, but with the skills to **lead, create, and compete** in a rapidly evolving digital world.

This Holiday Innovation Program is designed to inspire and prepare secondary school students to **thrive in the 21st century**. By combining **coding**, **artificial intelligence**, **leadership development**, and **entrepreneurial thinking**, we aim to bridge the gap between traditional education and the real-world skills required to **excel in today's tech-driven society**.

Our mission is simple: to spark curiosity, build confidence, and empower young minds to not just use technology — but to **build it, lead with it, and innovate through it**.

🌍 Program Structure

Theme: *Future-Ready Skills for Secondary School Students*
Duration: 4 Weeks (20 Days)
Target Audience: Secondary School Students (Ages 12–17)
Time: 9:00 AM – 2:00 PM Daily
Structure: Hands-on Workshops • Group Projects • Mentorship • Innovation Showcase

---

🔹 WEEK 1: Foundations of Tech, Coding & Digital Thinking

Day 1 – Orientation & Digital Literacy
- Welcome and icebreakers
- Internet safety and digital tools (Google Docs, Canva)
- Setting expectations and program structure

Day 2 – What is Technology & Innovation?
- Real-world examples of innovation
- Stories of local and global tech innovators
- Brainstorming community-based innovation ideas

Day 3 – Programming Basics with Scratch
- Introduction to block-based coding
- Create animations, games, and interactive stories

Day 4 – Introduction to Python I
- Python syntax, variables, input/output
- Simple programs like calculators and quizzes

Day 5 – Introduction to Python II
- Control flow (if statements, loops)
- Build your first text-based game or interactive app

🔹 WEEK 2: Artificial Intelligence, Ethics & Applications

Day 6 – What is AI?
- Understanding AI vs traditional programming
- Real-life examples (Siri, ChatGPT, YouTube recommendations)

Day 7 – Applications of AI
- AI in Education (Duolingo, ChatGPT)
- AI in Healthcare (X-ray readers, health apps)
- AI in Agriculture (disease detection, irrigation monitoring)
- AI in Transportation (self-driving cars, Google Maps)
- Group brainstorming: “AI for Good” challenge

Day 8 – Intro to Machine Learning
- Hands-on with Google Teachable Machine
- Train a model using images or sounds
- Predict outcomes and discuss training data

Day 9 – AI Ethics & Safety
- Debates on deepfakes, surveillance, privacy
- Classroom role play on responsible AI use
- AI & job displacement: risks and opportunities

Day 10 – Mini AI Project
- Build a simple AI tool or chatbot prototype
- Students present what problem their AI solves

🔹 WEEK 3: Leadership, Teamwork & Entrepreneurship

Day 11 – Self-Leadership & Team Building
- Understanding your strengths (SWOT)
- Collaboration games and goal setting

Day 12 – Public Speaking & Communication
- Storytelling and confidence-building

• Elevator pitch training and feedback

Day 13 – Introduction to Entrepreneurship
• Identifying problems worth solving
• Case studies of teenage entrepreneurs
• Business idea generation exercises

Day 14 – Lean Startup & Idea Validation
• Use of the Business Model Canvas
• Identifying customers, value proposition, and MVP

Day 15 – Pitching & Branding
• Designing a logo and pitch deck (Canva)
• Public speaking practice in front of peers

🔷 WEEK 4: Product Development, Innovation & Showcase

Day 16 – From Idea to Prototype
• Finalize group ideas (blend coding + AI + business)
• Assign team roles and goals

Day 17 – Building the MVP
• Build websites (HTML/CSS) or Scratch apps
• Develop chatbot or AI-based prototype
• Mentor check-ins

Day 18 – Pitch Rehearsal & Peer Review
• Practice demo pitches
• Receive feedback and make final improvements

Day 19 – Final Project Polish
• Slide decks, logos, branding, project finishing touches
• Rehearsals for Innovation Fair

Day 20 – Innovation Fair & Graduation 🎉
• Group project presentation & exhibition
• Pitch to invited guests, mentors, and parents
• Awards, photos, certificates

🧰 Tools & Resources

- **Coding:** Scratch, Python (Thonny or Replit), HTML/CSS
- **AI:** Teachable Machine, MIT App Inventor, Chatbot.com
- **Design:** Canva, Google Slides

- **Project Tools:** Google Docs, Trello, Business Model Canvas
- **Mentorship & Collaboration:** Peer reviews, group brainstorming, mentor feedback

---

🎯 Learning Outcomes

Students will:

- Understand the basics of programming and AI
- Build machine learning demos using no-code tools
- Identify opportunities for innovation in their communities
- Collaborate on real-world projects
- Create and pitch a tech-driven startup idea
- Present confidently at a showcase event

🏁 Program Deliverables

- Scratch or Python mini project
- Group AI/Chatbot prototype
- Business Model Canvas
- Startup pitch deck
- Presentation at Innovation Fair
- Certificate of Participation