CanSat Ghana Workshop Outline

General workshops for all schools:
1. Workshop 1 + Event Launch
2. Workshop 2 (Progress of Phase 1 & 2 mini-workshops and lessons)
3. Workshop 3
4. (Final CanSat Competition)

Number of lessons/visits from May - June: 6 visits per school

Phase 1: May (at least 3 hours)
Electronics Training Outline:
1. Introduction to electronics
   a. From science to electronics
2. Components and source
   a. Active and Passives
   b. Ohm's and Kirchoff laws and their applications
   c. Resistor combination circuits
   d. Voltage and current dividers and their applications
3. PN-junction diodes, and transistors
4. Introduction to Arduino Microcontrollers
   a. Arduino Hardware overview
   b. How to integrate and control a circuit with Arduino
   c. Reading sensors with Arduino
5. Nyarkoa Hardware overview
   a. Embedding Nyarkoa Payload in circuits
   b. Nyarkoa vs Arduino

Phase 2: June and July (At least 3 hours a day)
Programming Training Outline
1. Computer programming overview
   a. Orientation: The right attitude of a programmer
   b. Introduction to programming languages
   c. Introduction to Arduino Programming
      i. Structure of Arduino Program
      ii. Variables, operators, decision structures
      iii. Looping constructs, functions
   d. Intermediate stuff
      i. Adding external libraries
      ii. Adding Arduino compatible hardware like ESP32
2. Sending data through Nyarkoa communication modules
3. Working with the Nyarkoa CanSat Modules