High School Teachers Program, July 6-9 and July 11, 2026

Day 1: Monday July 6

Time	Activity, Tracks 1, 2, and 3: Pedagogy for all participants
08:00-09:00	Arrival and Registration
09:00-09:30	Opening Ceremony: Guests of Honor addresses / from CEMESTEA, from UoN / from IOC
09:30-10:15	Keynote: *Fundamental physics research in Kenya* (Dr. David Otwoma)
10:15-11:00	Keynote: *Applied physics research in Kenya* (Prof. Wilson Ng'etich)
11:00-11:30	COFFEE/TEA BREAK
11:30-13:00	Keynote: *Astrophysics & Cosmology* (Dr. Mirjana Povic)
13:00-14:00	LUNCH
14:00-16:30	Learner centered pedagogies • Inquiry-Based Learning (IBL) • Problem-Based Learning (PBL) • Lesson planning for IBL and PBL
16:30-16:45	Evaluation of Session
16:45-17:00	COFFEE/TEA BREAK
17:00	Break until next morning

Day 2: Tuesday July 7

Time	Activity, Tracks 1, 2, and 3: Pedagogy for all participants
08:00-08:30	Registration
08:30-11:00	Learning resources ● Improvisation ● Demos using improvised resources to teach selected physics topics ● Teachers showcase their improvisations
11:00-11:30	COFFEE/TEA BREAK
11:30-12:40	Planning and peer teaching
12:40-13:00	Evaluation of Session
13:00-14:00	LUNCH
14:00-16:30	Hand-on physics experiments ● Improvised experiments to demonstrate physics concepts from the grade 10 to 12 physics curricula (in collaboration with CEMASTEA). ● Experiments and demonstrations
16:30-	Reflective Journaling
16:30-17:00	COFFEE/TEA BREAK
17:00	Break until next morning

Day 3: Wednesday July 8

Time	Track 1: Pedagogy	Track 2: IoT	Track 3: Particles
08:00-08:30	Registration		
08:30-11:00	Peer teaching and critiquing of the prepared lessons.	Introduction to (Micro) Python programming. Connection PC <-> micro-controller, IDE description. Exercises: simple, standard Python programs (if possible: simulations of the trajectory of a stone thrown at different angles)	Intro to Particle Physics: • Particle cards • *Standard Model, in brief* • Rolling with Rutherford
11:00-11:30	COFFEE/TEA BREAK		
11:30-13:00	Hand-on physics experiments • Improvised experiments to demonstrate physics concepts from the grade 10 to 12 physics curricula (in collaboration with CEMASTEA). • Experiments and demonstrations	Hardware access, programming the LED on the CPU card	Visualizing LHC: • Crazy Human Particles • Calculate the Z boson mass
13:00-14:00	LUNCH		
14:00-15:00	Hand-on physics experiments, continued	Reading the switch	• ATLAS Virtual Visit
15:00-16:10	Planning School Visits		
16:10-16:30	Evaluation of Session		
16:30-	Reflective Journaling		
16:30-17:00	COFFEE/TEA BREAK		
17:00	Break until next morning		

Day 4: Thursday July 9

Time	Track 1: Pedagogy	Track 2: IoT	Track 3: Particles
08:00-08:30	Registration		
08:30-11:00	Peer teaching and critiquing of the prepared lessons.	Sensors (temperature, humidity, barometric pressure)	ATLAS Masterclass • Introduction • Measurement • Discussion
11:00-11:30	COFFEE/TEA BREAK		
11:30-13:00	Hand-on physics experiments	LCD display	QuarkNet Data Activities
13:00-14:00	LUNCH		
14:00-15:00	Hand-on physics experiments, continued	Combining sensors and LCD to create a simple weather station	QuarkNet Data Activities
15:00-16:10	Planning School Visits		
16:10-16:30	Evaluation of Session		
16:30-	Reflective Journaling		
16:30-17:00	COFFEE/TEA BREAK		
17:00	Break		

Day 5: Saturday July 11

Time	Activity, Tracks 1, 2, and 3: Final work for all particiants
08:00-08:30	Registration
08:30-11:00	Astrophysics and Cosmic Rays
11:00-11:30	COFFEE/TEA BREAK
11:30-13:00	Creation of in-school implementation plans
13:00-14:00	LUNCH
14:00-15:00	Presentation of in-school implementation plans
15:00-16:10	Planning School Visits
16:10-16:30	Evaluation of Session
16:30-	Reflective Journaling
16:30-17:00	COFFEE/TEA BREAK
17:00	**End of workshop**

High School Learners Program

July 13, 2026 – July 16, 2026
4 days, 4 schools; 400+ learners per school per day.

TIME	MODULE	ACTIVITY AND RESOURCES	PARALLEL TRACKS
0830–0900	**Arrival and Registration**	Welcome and Physics Icebreaker (Particle Cards)	
0900-1030	**African and other Science Heroes**	Speeches from various Keynote speakers (Why Physics; Soft skills; Career Pathways; etc.)	Too long, need activity Physicists from ASP?
1030–1100	**HEALTH BREAK**		
1100-1240	**Physics in Daily Life**	Group demonstrations of key physics concepts from grades 10 to 12 of the senior secondary school curriculum	1. Electricity 2. Particle Physics: Accelerators 3. Particle Physics: Detectors 4. Astrophysics
1240-1300	**Physics trivia**		
1300–1400	**HEALTH BREAK** Interaction with different physics professionals		
1400–1530	Physics in Daily Life	Continuation of the Physics demos	
1530–1630	Reflection and Mentorship Takeaways	Panel discussions with the students in small groups with different expertise. Share project insights and career advice.	

PARALLEL TRACK DETAILS

TRACK 1: ELECTRICITY	TRACK 2: ACCELERATORS	TRACK 3: DETECTORS	TRACK 4: ASTROPHYSICS
0830–0900	• Amazing Human Particles (30 min) (w/Track 3)	• Amazing Human Particles (30 min) (w/Track 2) • Introduction (30 min) • Rolling with Rutherford (30 min) • Express real LHC data analysis (30 min)	