ROBOTICS
Particle Accelerator Camp

Ages 7–14 | LEGO Mindstorms Robotics
Applied Science
Hands-on
DSA Portfolio Boost |
Duration: 2hrs

Photo is for illustrative purposes, design varies according to actual product made by students.

A program of Applied Computational Intelligence Institute
Curriculum powered by the Explainable Intelligence™ Framework
with research support from the Cognitive Intelligence Lab

Cognitive Systems Academy™

Another World Class
Content by Cognitive Intelligence Lab

Build a LEGO robot, code and learn about static, circuitry and particle accelerator!

QUANTUM PHYSICS MADE EASY WITH LEGO ROBOTICS!

From the Same creators of Particle accelerator Display and Workshop at **The Art Science Museum**!

Yes, particle accelerator science is a critical, applied part of quantum physics, specifically within the fields of particle and nuclear physics. Accelerators use electromagnetism to speed up particles, allowing researchers to study quantum phenomena, test the Standard Model, and create new particles by converting energy into matter. Now, Let's make it fun!

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World Class Framework:

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Students learn to explain how their code and systems behave, like **Harvard (CS50) and MIT,** they don't start by memorizing syntax. Curiosity, reasoning, and understanding always come first.

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Design Topics

Make A System

That Moves a Ball

That Picks and Places

That Manufactures

Design a System that keeps a ball going

Build , Code, Play

-Build system components to be completed by

individuals, then work as a team, combine to complete the whole system!

Challenge: **AUTONOMOUS**

-Build and Program a system to keep the ball going in a loop without human involvement!

-Open ended challenge/Problem Solving

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Key Takeaways

DSA PORTFOLIO BUILD UP

- Each student receives a Digital DSA Portfolio
- DSA write-up, Testimonial & Evidence

Skill Sets:

- Creativity
- Communication Skills
- Collaboration & Cooperation
- Goal Orientation
- Leadership Skills
- Analytical Reasoning
- Scientific, Robotics concepts
- 21st century skills competencies
- Robotic Technological application and concepts

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SHOW OFF!

Let's Show Off!
Present what you have built!
Student presentations to parents at Open House.

1)Introduce your team and name your design!
2)What does it do?
3)What are your roles?
4)How does it work?
5)Share one challenge you encountered during the build.
6)What is your solution?
7)Why Should we vote for you?

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14 Years of Pioneering STEM Education & Robotics in Singapore
By creators of FLL Grand Champion

Award-Winning Curriculum

Developed by FLL Grand Champion Master Trainers.

Curriculum developed by experienced, award-winning robotics and computing educators, and refined through the **Explainable Intelligence™ Curriculum Framework** with research support from the *Cognitive Intelligence Lab.*

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COGNITIVE SYSTEMS ACADEMY™

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CODING. REIMAGINED.

Building Intelligence Through Systems Thinking & Explainable AI

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