Project α

Bringing the brightest minds together

The first science accelerator programme for gifted children

Academic Assessment

Critical thinking, problem solving, science concepts

12 Hands-on Science Projects

Hybrid learning with e-learning platform and experiment kits

Real-life Excursions

Workshops and visits to top-notch corporates

Learning Community

Learning with the brightest peers at MIT Innovation Node

Exhibition & Ceremony

Student science fair with presentation and certificate

BONUS AWARD!!!

Science x NFT x Arts

Bring your creations to reality by NFT minting!

APPLY NOW

Complete the FREE pre-programme assessment now and receive your individual report

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The top 200 performing students will be nomited to join Project Alpha

Curriculum aligned with

UNIVERSITY OF CAMBRIDGE

Supported By

MIT Hong Kong Innovation Node

MIT

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Project Alpha 2022 Learning Schedule

	Month	Big Bang Lab Lesson, Workbook and Experiment	Monthly Workshop / Excursion*
BIOLOGY	Feb	1) Muscles & Bones 2) Digestive System	
	Mar	3) The Heart 4) The Lung	Weekend Science Workshop 1 13, 20, 26, 27 March AM & PM available Locations: Sheung Wan & Whampoa
CHEMISTRY	Apr	1) Secret Message 2) Blood Patterns	Corporate Excursion 1 Dates (TBD)
	May	3) Fingerprinting method 4) pH value of liquids	Community Event @ MIT Innovation Node Dates (pick one): 8, 15 May
PHYSICS	Jun	1) Basics of Electricity 2) The Electrical Circuit	Weekend Science Workshop 2 - NFT
	Jul	3) Circuit Diagram 4) Static Electricity	Corporate Excursion 2 + NFT awards selection
	Aug	Graduation Ceremony + Student Presentation	

*Further dates for in-person events will be announced later and will be subject to COVID-related government restrictions

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Project Alpha 2022 Syllabus

Structured Home Learning - Hands-on project experiments (2 experiments / month) and learning points

Month	Pillar	Lessons	Details
February 2022	Biology	Muscles & Bones	Students will learn about the structure and function of the skeletal system.
		Digestive System	Students will learn about the 4 steps of food processing: Ingestion, Digestion, Absorption & Elimination.
March 2022		Heart	Students will learn about the structure and function of the Heart & Circulatory System.
		Lung	Students will learn about the structure and function of the respiratory system including the lungs & diaphragm
April 2022	Chemistry	Secret message	Students will uncover the different ways of message encryption via physical, chemical and computational methods.
		Blood Patterns	Students will learn about the 5 steps in crime scene investigation and how blood patterns provide critical clues.
May 2022		Fingerprinting Method	Students will explore the 3 types of fingerprint patterns and the difference between patent and latent prints.
		pH value of Liquids	Students will learn about the difference between acids and bases and how we use pH scale and values to distinguish them.
June 2022	Physics	Basics of Electricity	Students will learn about the properties of electricity and the differences between conductors and insulators.
		The Simple Electrical Circuit	Students will learn about the basic components in a electrical circuit and the differences among closed, open and short circuits.
July 2022		Circuit Diagram	Students will learn how electrical engineers represent different components within a circuit by symbols.
		Static Electricity	Students will identify the difference between current and static electricity and the real life application of static electricity.

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Science Projects with Hybrid Learning Platform Big Bang Lab

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Interactive workbook with Hybrid Learning Platform Big Bang Lab

Science Vocabulary

BIG BANG ACADEMY

Project X

HUMAN BODY

Lesson 1 - How Strong Are You? (Muscle & Bones)

Keywords

- Bones 骨頭
- Skeleton 骨骼
- Joint 關節
- Muscles 肌肉
- Tendon 肌腱
- Rigid 堅硬
- Flexible 靈活
- Contract 收縮
- Voluntary 自願的
- Brittle 脆弱易碎

Learning Activities on Science Concepts

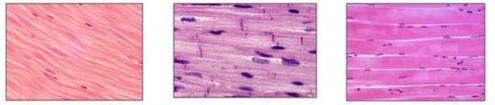
LEARNING ACTIVITY 1 - GUESS THE SKELETON

Match the animal with its skeleton!
Write down your answer in the box.

- Frog
- Turtle
- Elephant

LEARNING ACTIVITY 2 - MATCH THE MUSCLES

There are 3 different types of muscle tissue, and they are in different parts of our body. Can you help Bobo match the muscles to their body parts? Draw a line to match them!



Smooth Muscle Tissue | Cardiac Muscle Tissue | Skeletal Muscle Tissue

Heart | Hamstring | Digestive System

Scientific Thinking

EXPERIMENT JOURNAL

Exhibition Use

Complete the 5-step journal while doing your experiment.

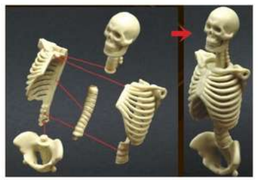
1. **Ask a question**
   State the question you would like to investigate.
2. **Make a hypothesis**
   Make an educated guess to answer your question.
3. **Do an experiment**
   Design an experiment (draw/ write) to investigate your question.
4. **Observe and analyse the data**
   Make key observations (draw/ write) from your experiment.
5. **Conclude & present your work**
   Draw a conclusion on your results.

Hands-on Experiment with Big Bang Lab

STEP-BY-STEP GUIDE FOR SKELETON MODEL

(!!Warning: Small parts. Do not put any material parts in your mouth, parental supervision required)

1. Attach the neck bone to the skull.



2. Attach the spine to the left rib cage.
3. Attach the skull and neck to the spine.
4. Hold the pelvis in place and attach the right rib cage.

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STEAM Workshop Example -
Olympics x STEAM (Minnie Soo)

Minnie Soo, 2020 Tokyo Olympics Women's Team Bronze Medalist, has transformed into a physics teacher to share her inspirational story and led exciting sicnece experiments about air pressure with our students

Corporate Excursion Example - Prenetics™

As the leading Science EdTech Company in Hong Kong, we have hosted the first immersive Biotech Scientist experience in partnership with Prenetics and NowTV.

Over 80 students and parents joined us for an exclusive visit to biotech science labs. They learned everything about viruses and DNA with games, experiments, and group presentations.

Group Presentation

Q&A Session

Lab Visit

Science concept

Hands-on Experiment

Real-life Application

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Science Workshop/Excursion Example - Neuroscience Workshop

香港科學館
HONG KONG SCIENCE MUSEUM

Big Bang Academy was invited by the Consulate General of France to host STEAM workshops at Hong Kong Science Museum, with the theme "[Brain]Storm".

During the workshop, our educators gave an introduction to basic neuroscience through a series of hands-on experiments, our participants got to create their own 3D brain diagram and conduct exciting brain experiment.

Learning Science concepts

Learn with science model


Team work & communication

Doing themed experiment

Hands-on and immersive

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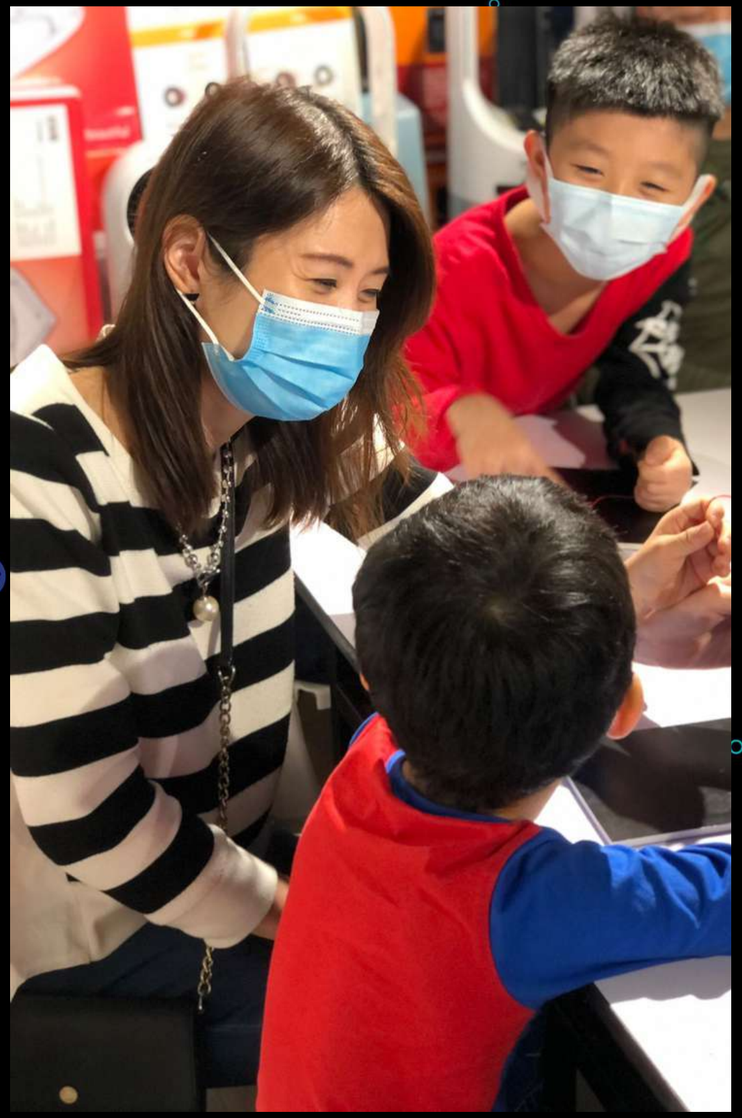
Science Workshop Example -
Electric circuits and Engineering

Lenovo



Cross collaboration between our Big Bang Lab (E-learning platform) with Lenovo's new product launch of child friendly screens and laptops.

Children got to experience hybrid learning with interactive lessons and games on Big Bang Lab coupled with an LED experiment to learn about electricity.

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Project Alpha FAQ

The first science accelerator programme for gifted children

What is Project Alpha?

Project Alpha is a 6-month Accelerated Science Program to unlock children's potential in Science x Tech x Arts x Leadership. The program is designed for G2-G3 students who demonstrate exceptional talent and interest in Science / STEAM

How to join Project Alpha?

The top 200 students in Hong Kong nominated by school or selected from pre-programme assessment

How much time commitment is needed for each experiment project at home? Do parents need to help with the experiments?

Students need to complete 2 experiment projects per month at home with our interactive e-Learning platform Big Bang Lab and with the experiment materials which are delivered to your home. Each experiment project will take around 30-45 mins time to complete. The experiment projects are designed as self-directed learning using hybrid learning curriculum, parents are only expected to help out in some parts of the experiments

When will the monthly workshops and excursions be held?

the Monthly workshops and excursions will be taken place during the weekends i.e. Saturday and Sunday with different time slots a available for booking. Students have to attend one workshop / excursion per month. The workshops / excursions will be postponed for one month in case of school closure due to Government COVID restrictions

Do parents need to attend the monthly workshops and excursions?

We highly encourage parents to join the workshops and excursions as parents serve a very important role in children's attitude to education and learning. However, if parents are unable to attend some sessions, just let us know at least 2 weeks in advance

Where will the real-life learning excursions take place?

These excursions will be taken place at a non classroom setting that brings out the real-life application of science and STEAM. Examples including visits to DNA science lab of Prenetics (past event) and Hong Kong Observatory (to be confirmed)

What is the programme fee?

Programme fee is HKD8,000 all-inclusive for 6 months, students who are nominated by a Big Bang Partnership school will get a 10% OFF discount

Project Alpha FAQ

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About the Pre-Assessment

How will the assessment be graded?

The pre-assessment aims to measure three main things, including student's academic ability in science, their motivation to learn science and also their scientific thinking skills. The assessment is carefully designed by our education researcher and will be graded in accordance to the pre-set scale.

When will I receive the assessment result?

You will receive the assessment results via email in 3-7 working days

When will I know whether my kid is admitted into Project Alpha?

Successful admission of Project Alpha will be sent via email after the assessment report and placement will only be confirmed after collection of full programme fees

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