
S.T.E.M GRADE 7-9

BACKGROUND

The development of science and technology grow faster at an exponential rate every year. Thus, the field of Science, Technology, Engineering, and Mathematics (S.T.E.M) becomes more popular and important than ever. Noble Academy has a strong foundation in the field of S.T.E.M and has offered the course since its founding. S.T.E.M course in Noble Academy centers around the application of science of mathematics in real life, in which students are able to connect what they learn in theories into real life application. This course is aimed to grow both students' interest in the field of S.T.E.M and knowledge.

Students will explore a specific topic of S.T.E.M in each session while a teacher introduces, supervises, and mentors the topic and activities step-by-step. The course will have a hands-on approach, in which every student will actively do the activities themselves and explore the field of S.T.E.M that cannot be experienced anywhere else.

PREREQUISITE

This course is designed for students who are in grade 7-9 (SMP 1 sampai 3) and have graduated from elementary school with science as one of the listed subjects.

DEVELOPED SKILLS

Emphasizing in the application of the 4C from the 21st Century Skills, S.T.E.M gives students opportunity to:

- develop problem solving and critical thinking skills
- practice to use creativity in order to solve problems
- grow curiosity and inquiry skills
- develop passion in science, technology, engineering, and mathematics through hands-on and fun learning experiences
- develop scientific way of thinking, engineering-design thinking, and mathematical skills
- learn to collaborate and communicate with fellow scientists

COURSE OVERVIEW

The course is designed to be on-site, with a session having a duration of 2.5 hours (with 30 minutes break in between) for once a week. The course will cover a variety of topics, including, but not limited to: Anthropology and biology, engineering and technology, astrophysics, and physical science.

COURSE OUTLINE (TENTATIVE)

Month 1		
Week	Topic	Activities
1	Anthropology and Biology	The Sixth Mass Extinction
2	Anthropology and Biology	Drivers of Extinction
3	Anthropology and Biology	Slowing Extinction
4	Anthropology and Biology	The Making of Mass Extinction

Month 2		
Week	Topic	Activities
1	Engineering and Technology	Exploring Mars with Scratch
2	Engineering and Technology	Roving on the Moon
3	Engineering and Technology	Touchdown
4	Physical Science and Astrophysics	Dropping in With Gravitational Waves

Month 3		
Week	Topic	Activities
1	Engineering and Physical Science	Building Straw Bridge
2	Engineering and Physical Science	Building More Complex Bridge
3	Physics and Physical Science	Swinging Pendulum
4	Physics and Physical Science	Bouncing Balls: Collusions, Momentum, and Math

METHODOLOGY

Synchronized, on-site, and hands-on learning, 21st-century skills