NSS.IONIA
THE FUTURE IS NOW

Course Outline

Aerospace Engineering

Age : 10-14, >12 years old

Introduction

The course will focus on STEM, Aerospace Engineering knowledge, including to Aerodynamics, Aircraft Structure, Mechanical Part Design, and Aerial vehicle via designing and creating models such as Airplane from cardboard with Aerodynamics Theory, Cotton Launcher, Rocket with art design, drone with motor control, etc.\nThe student will use Physics, Mechanical, Aerospace, and Design knowledge using their imagination and technical skills for designing and creating models. In the early year, Students will follow same lessons but less in detail and theory that they need to learn.

Seq	Lesson	Objective
1	What is Aircraft?	In this lesson, students will learn about the difference between aircraft and airplane and students can give examples.
2	Part of Airplane	In this lesson, students will learn about aircraft components. What does a plane consist of and what is the function of each part?
3	How to fly	In this chapter, students will learn basic principles of flying. In different wing styles, how do the differences between each type of wings affect an airplane's flight?
4	My airplane I	As students have already learned the elements of the plane. Later, we will allow students to design and build their own aircraft in 3D.
5	My airplane II	This lesson is a continuation of the previous lesson. in which students are asked to continue their work from the previous time.

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6	Who works at Airport?	In this lesson, student will be taken to get to know various occupations that work and are related to airplanes along with explaining the important functions of each profession.
7	Airplane Quiz	From before lesson, students will have basic knowledge of aircraft. Therefore, we will test their knowledge through the quiz game which is a fun and relaxing activity. Moreover, this activity will also indirectly recap their knowledge.
8	Space Exploration	In this lesson, students will learn about space. Starting with the name of each galaxy, solar system, and planet in the solar system with its name, its characteristics, and its special.
9	Space Technology	In this lesson, students will learn about space technology. What are those things? What is it for? and how is it important?
10	Who work at space?	Previously, students had already learned who works at Airports and learned about airplanes. In this lesson, students will learn about those who work in space or who are involved in space work.
11	Our Earth	In previous lessons, students had learned about planets in the solar system and space technology. In this lesson, students will learn about the world we live in. What does our world consist of? Why does life exist on Earth and how important is space technology to our planet?
12	Recap	In this lesson, students will recap their knowledge through the quiz game activities.