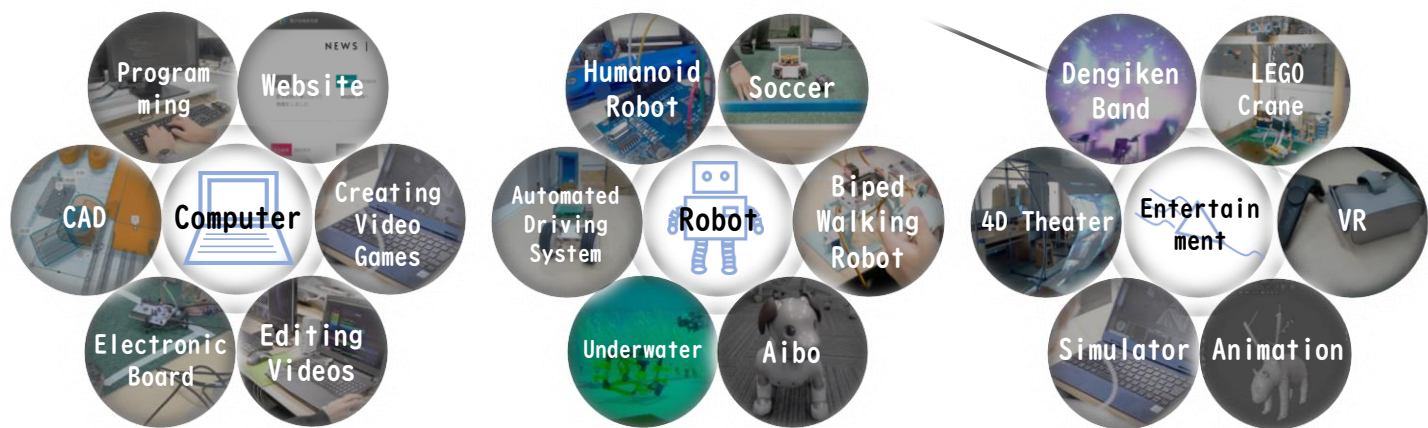




DENGIKEN GUIDE



What is Dengiken?


Dengiken is a club where we do research and help each other to achieve our goals. We are pursuing our goals based on our motto: "research and contribution." We have many kinds of devices, kind members and teachers.

<http://dengiken.jp>



- Our club activities -

- Pursuing our goals -




Creating websites
We create websites with HTML.




Making video games
We create video games with C# and Unity.




Creating videos
We film videos with a drone and a cutting-edge camera, editing them after.



Entertainment
We create an entertainment facility by utilizing our knowledge and skills.



Public relations
We post information on our activities on our websites.



Creating our original robots
We design and develop our original robots with CAD and a 3D printer.



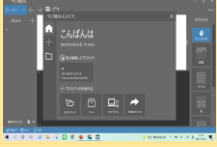
Developing robots for competitions
We make robots with an EV3 and a printer to take part in the WRO and RoboCup.



Developing electric devices
We make electric devices integrated with electric boards. We also use the software, Arduino.




Making teaching materials
We contribute to education by making teaching materials with drones and EV3.




Developing apps
We develop applications with programming languages, including Java.



Research on artificial intelligence
We do research on automated driving systems and a programming language, Python.



Composition
We compose music for entertainment.



Creating animations
We create 3D animation with Blender and Unity.



Making posters
We make posters with PowerPoint and Photoshop.




Equipment management
We think that equipment is important. Therefore, we manage the equipment carefully.

- Events -

- Unique to our club -



Daily meetings
We hold a meeting every day at the end of our club activity and share our progress.



Project meeting
We give presentations on our project and ask our teachers for advice.



Christmas party
We enjoy a Christmas party by playing bingo.



Camp
Camp in August
We visit a car assembly plant, learning technology.

- History of Dengiken -

- 12 years -

2009 Established
Promoted from Computer Club to Dengiken.

2014 Silver medal, All Japan Junior and Senior High School Web Contest
We take part in BBCoach now.

2015 Second place, Alfred Spring Cup
Competition for controlling a robot with LEGO Mindstorms.

2016 Second place, Alfred Spring Cup
Our team was in second place two years in a row.

2017 First place, WRO Presentation
Both junior and senior high schools won the championships.

2018 First place, Underwater Robot Contest
Doing a task with a robot underwater.

2020 First place, Underwater Robot Contest
First place, the second time.

Poster Prize, Robo Cup Jr.
We used our fully original robot for a robot soccer match.



- Dengiken methods -

- This is the research procedure: -

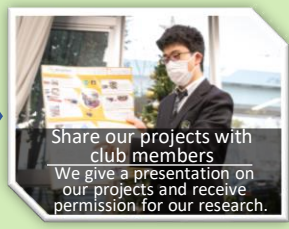
Our research methods are similar to the methods introduced in corporations. We can acquire skills that are necessary in society by doing research in our club.



Research project
We pursue our goals and think of our original ideas.



Draw up a research project
We put our design, hypothesis, and budget into shape.



Share our projects with club members
We give a presentation on our projects and receive permission for our research.



Do research
As soon as we get permission, we start our research.



Contribution and competition
We show and utilize our research at a competition and our school's festival.

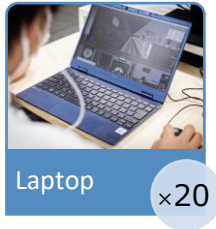


Improvement
We discuss problems with our research and improve it.

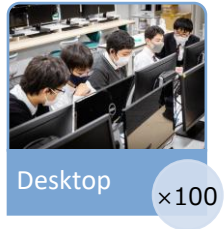
- Tools our club owns -

- The same tools that businesses own -

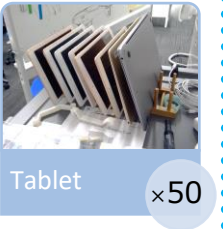
You learn how to use the following tools if you become a member of our club.



Laptop ×20



Desktop ×100



Tablet ×50



3D printer ×10



Drone ×50



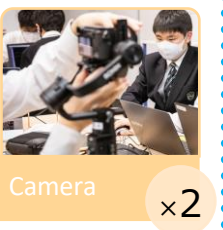
LEGO Mindstorms ×50



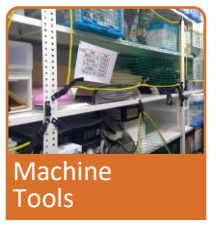
Projector ×3



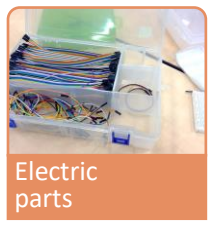
VR goggle ×2



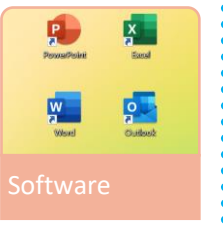
Camera ×2



Machine Tools



Electric parts



Software

- Places -

- Dengiken's laboratories -

We can use a laboratory depending on what research we do. Each laboratory has its own role.



Computer Laboratory

We have 100 computers and many kinds of software useful for drawing up research projects and creating videos and video games.



Robot Laboratory

Our school owns 3D printers and toolboxes necessary for developing robots. We often have discussions in this laboratory.



Processing Room

Our school owns many tools for processing materials. We can use a factory for Handicraft Club when we need to cut, adhere, and polish materials.

Workshop

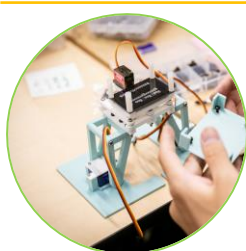
The purpose of our workshop is to contribute to society. We provide children with opportunities to enjoy making things.

※Please see the website of Shibaura Institute of Technology.
<https://www.shibaura-it.ac.jp/visitor/public/extensions/otk>

Examples



Experiencing making a thing with Lego Mindstorms



Experiencing making a biped walking robot



Experiencing creating a 3D object

A message from
our club teacher

We learn skills necessary in society
from our teachers.

It takes six months to reach the moon at eighty kilometers per hour (by car), 53 days at 300 kilometers per hour (by Shinkansen bullet train), and 16 days at 1,000 kilometers per hour (by jet). Of course, it is impossible to reach the moon without enough fuel. Apollo 11 reached the moon in four to six days. If you walked to the moon, it would take eleven years to get there. Although we feel the moon is close to us, it is actually far from us based on the calculation. I have a question. Can you explain the difference between the moon and the earth?

Advisor

Mr. Ryo Iwata

- Answers: 1. Gravity (1/6)
2. The length of the day (One day on the moon = 29.5 days on the earth)
3. Temperature (daytime 110°C, night -170°C)

Do you know the project, called the "Artemis Program," that a base will be built on the moon? NASA announced that it would send humans to the moon in 2024 and start building the base by 2028. The United States, Japan, and European countries will be involved with the project, different from the previous APOLLO project.

Surprisingly, not only JAXA but also Japanese corporations will work together to realize the goal. Why do you think such a huge number of Japanese corporations will work together? History shows that businesses have been making every effort to improve technology and contributing to humankind.

The motto of our club is "research and contribution." Our club members eagerly do research and introduce the findings into their workshops. In this leaflet, we show how fun it is to do club activities. If you feel our activities are difficult, this means you subconsciously think you want to try them.

We are looking forward to seeing you in our club.

My ultimate goal is to take part in the Artemis Program. Do you think it's impossible?

Photo Gallery

Take a look at the daily life of DENGIKEN!
There you will find the eyes of a researchers.



Giving a presentation on a project



Programming



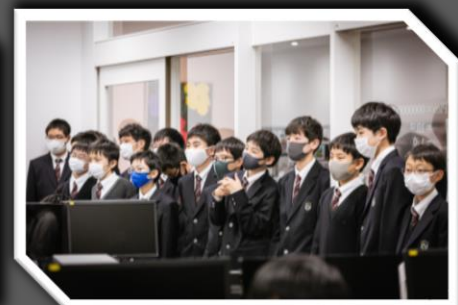
Creating 3D data with CAD



Inspecting cameras



Constructing a robot



Sharing information with teachers