# SDG-Inspired Programming Course in Toyosu Expanding cognitive ability and contributing to a sustainable society

Tokyo Individualized Educational Institute, Inc. (main office: Shinjuku-ku, Tokyo; President and Representative Director Katsuki Saito), a member of the Benesse Group, will begin classes for the first "Benesse Science Class STEM Programming Course" on February 17, 2019 (Sunday) in Toyosu, Tokyo.

The shift to mandatory programming education for elementary school students will begin in 2020. The Benesse Science Class **created the year-long STEM Programming Course** to expand on the individual programming courses thus far. This course was created based on our belief in the importance of children learning programming and what we view as the experiences that will help children thrive in an unpredictable future.

The STEM Programming Course features original curriculum that takes the flexibility of "STEM education" comprehensively covering the sciences, with elements of the "two S's". STEM refers to science, technology, engineering, and mathematics. **The "two S's" refers to society and sustainability.**
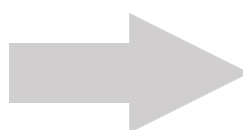
-Ingenuity making towns more enjoyable
-Disaster prevention and technology
-Energy conservation ideas
-Urban design
-Transportation systems
-Transforming parks

This course goes beyond simply introducing the joy of creating something through programming. **This course challenges students to use programming to resolve relevant social issues.** In a sense, this is **SDG-inspired programming**. **SDGs are goals through 2030 adopted at the United Nations to promote sustainable development**. The movement promotes proactively cooperating to resolve problems affecting the planet.

In one of classes in the STEM Programming Course, **a robot will be used as a disaster rescue robot through which students will evaluate the programming used to dispatch robots to disaster sites**. Children will also be asked to evaluate the types of disasters that could occur in a heavily populated town and what can be done for disaster prevention. Children will also take turns presenting their opinions. For example, areas near oceans face the risk of a tsunami. Rivers present the risk of falling into the water.

Dense residential areas have a risk of fires. Children will have various ideas on how to use technology to prevent disasters. **The experience of thinking about links between social management and technology will challenge children to make unpredictable futures into sustainable societies.** Inspiration brings the world together and paves a way to the future. This one-year program period will provide the learning experiences that enable this type of thinking.

The STEM Programming Course will promote three types of skills development.
◆Problem resolution skills - The ability to evaluate social issues and new technology together
◆Collaboration skills - The ability to cooperate with others in proactive and interactive learning
◆Programming-based analysis - The ability to think logically from a programming perspective

This course is not designed to develop "people with programming skills".
This course fosters "pioneers with the ability to apply cognitive reasoning developed through programming".

All course content is original material designed by the Benesse Science Class.
Up to 8 students per class, each class with a main instructor and an assistant teacher. Both staff have experience in group education and facilitation. Classrooms are equipped with tablets and school supplies so students don't need to bring anything or take anything home. The classroom is conveniently located immediately near Toyosu Station (1 minute walk from Tokyo Metro Yurakucho Line, 2 minute walk from Yurikamome Line).
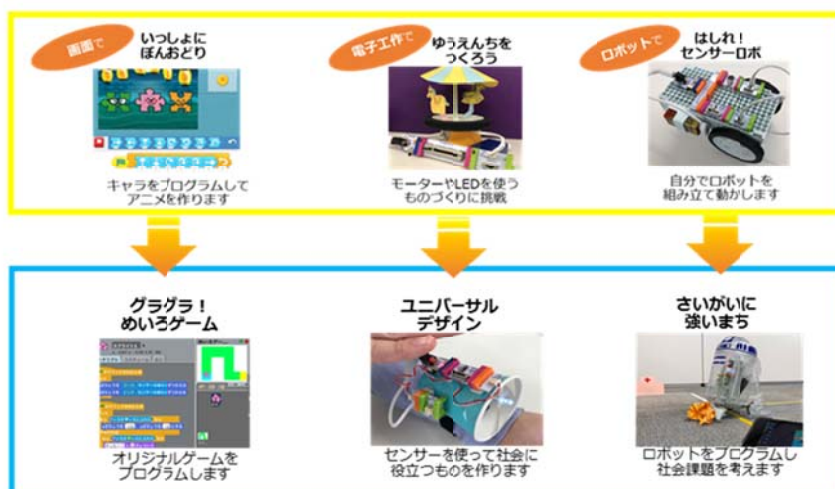
◇**Benesse Science Class STEM Programming Course**◇

Course start date	:	February 17, 2019 (Sunday)
Location	:	Benesse Science Class Toyosu Classroom
Course schedule, time	:	Once per month, 90 minutes per class
Class structure	:	STEM Beginners (1st & 2nd graders), STEM Intermediate (3rd & 4th graders)
Address	:	TB Toyosu Bldg., 4F 4-1-23 Toyosu, Koto-ku, Tokyo 135-0061
		*Located inside the Tokyo Individualized Educational Institute

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-Scratch: Scratch was designed, developed, and is maintained by the MIT Media Lab Lifelong Kindergarten group.

-Pyonkee: Pyonkee is an iPad application developed by SoftUmeYa based on Scratch in accordance with a Scratch source code license from the MIT Media Lab. The app is available for download for free via the AppStore.

See the following website for details. http://www.softumeya.com/pyonkee/ja/(japanese only)