



BOTH PHOTOS MASATOSHI SAKAMOTO

Runa Yamamori (center) feeds jellyfish with her classmates in the biology lab at Kawagoe Girls' Senior High School.

Tomorrow's World

The world now faces threats in many different areas, such as the environment, food and infectious diseases. Japan is confronting added problems such as aging, natural disasters and energy issues. Japan is focusing on promoting science and technology for dealing with these domestic and overseas problems, and helping to create a sustainable society. This month's Cover Story features a range of efforts in science and technology that hold promise for leading us toward rich and full lifestyles in the future.

At 4 p.m., after regular classes have finished, students come to the biology room in Kawagoe Girls' Senior High School in Kawagoe, Saitama Prefecture. Against the background of music in the distance played by students in the mandolin club, they start to feed crickets, observe jellyfish in the water tank and peer at mold fungi using a microscope.

These are students of the SSH class. SSH stands for Super Science High School. The Ministry of Education, Culture, Sports, Science and Technology

designated SSH schools with a focus on science, technology and mathematics education with the goal of developing human resources in these areas who can serve as leaders in the future. The SSH system was launched in 2006, and in fiscal 2011, 145 schools across the country were given the SSH designation. These schools pursue a wide range of initiatives. The SSH course set up at Kawagoe Girls' Senior High School provides more science classes and research hours than the regular course over the

three years of high school. For example, students in the second year of SSH work on experiments and attend lectures on science, instead of art and music that students in the regular course take. Most of the SSH students also take part in research activities after school.

"I've been interested in jellyfish since I saw them in the ocean when I was a child," says Runa Yamamori, a senior in SSH. When I was a junior high school student, I read the book *Kurage no fushigi* [Mysteries of jellyfish] and I was drawn right into the world of jellyfish... It's interesting to think that while jellyfish are about 98% water, they move around actively."

In August 2011 at the SSH student research presentation



Teacher Mitsuko Yano (right) with a student observing mold fungi on a petri dish

meeting where SSHs nationwide gather and present results of their research, Yamamori gave a poster presentation titled "Strobilation of moon jellyfish and the impact of thyroxine at each stage," which was achieved with support of university professors and aquariums, for which she received a poster presentation award.

"I hope to continue my research on jellyfish when I go to university," Yamamori says. "I want to become a researcher or a jellyfish keeper at an aquarium."

While about twenty-five students take the SSH course out of about 1,000 students at the high

school, many non-SSH students participate in the activities, such as in visiting university research institutes and attending lectures by university researchers invited to the school. In the science school for local elementary and junior high schools, which is carried out annually as part of community contribution activities, more than 100 students participate and present science experiments. About 40% of the students who go to university also choose to study science.

"As we have seen in the problems with nuclear power plants and the environment, science and the public are closely connected in modern society," says Yasunori Nagamatsu, the high school's principal. "To prevent people from panicking or taking the wrong action due to scientifically groundless information, I would like students to acquire scientific knowledge. Many alumni will go on to be elementary and junior high school teachers, and developing human resources who cultivate the next generation with scientific knowledge is one of the major objectives of our school education." 