

## As Environmental Education by Snow As a Natural Resource in Hokkaido

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Hokkaido University and Hoshino Resort Tomamu operates the laboratory for snow and ice, named Ice Lab, in Ice Village built in Winter. Shimukappu Village where Tomamu is in has the domestic lowest temperature record in this century, -35.8 oC, in Japan, and the Ice Village can be built under its cold condition. We report the following three practices in Ice Lab from December, 2011: (1) tourists' learning snow and cold in Tomamu, (2) the local children's learning through rediscovering the charming of snow and the cold, (3) our graduate students' practical learning through touching of the operation of Ice Lab.

### (1) Tourists' learning snow and cold in Tomamu

We provide the experience of making a snow crystal strap shown in Photography. This strap is made by photopolymer wrapping the snow crystal and fixing it by lighting under the cold condition where no crystal melting occurs. This method is well known among the scientists, but is the first trial in the world for public people. Through the processes of handling the snow crystal by tourists, they really feel various forms and sizes of snow crystals, changes in the form of crystal falling just during thin snow cloud passing in several minutes, worst day when no good snow crystal obtained, and so forth. The experience is free charged, but a snow crystal strap that tourist can be brought back is charged, because the strap is the evidence of disappeared snow crystal that you observed by your eyes and moved by your hands as the only one in the world. The panels of snow crystal photos taken by the emeritus professor Katuhiro Kikuti from Hokkaido University, that continue the concept of Pro. Ukichiro Nakaya, who is famous for the words of Snowflakes are "the letters from heaven", and the professors' talks (Science ice-cafe) from Hokkaido University is held almost every week.

### (2) Children's learning through rediscovering the charming of snow and the cold

As the students in Primary school and Junior high school learn the worth of local snow and the cold, we hold the activity named "Snow School" in 2012 and 2013. Using the facilities of Ice Village that is not open in the daytime, though the activities of "searching treasure in the snow", "measuring the depth of the snow""observing the snow crystal", and "making the snow crystal replica", we hope the children can enjoy observing the snowfall and the snow cover and learning the property of snow. Besides, we hope that they can get to know that the snow in Shimukappu Village is connecting with the local living, and it is an important resource for water and the tourism. Then they can get proud of the local resource such as snow and the cold.

### (3) For graduate students learning through internship

The students from the Course in Practical Science for Environment (PractiSE), Graduate School of Environmental Science, Hokkaido University get to learn how to discover social projects and to solve various difficulties in projects through their practical research and developing the environmental education program, based on the researches themselves. For example, as the practical activity and research, in order to make the tourists from overseas understand snow and the cold, besides the panels in Japanese, we prepared the ones in Chinese and English in Ice Lab. As introducing to the tourists, the graduate students do the hearing investigation and then improve the display and the explanation. The interesting of the ice and snow gets to be known and the natural environment of the place with low temperature and heavy snow get to be understood during the tourism through this program. Based on the experience, we are looking forward to improve this in the near future.

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