

## A model study of natural phenomena by K-12 students

# Yoshio Okamoto[1]

[1] Tennoji H.School of Osaka-kyoiku.Univ.

<http://www.osaka-kyoiku.ac.jp/~yossi/>

We have tried to introduce models and simulations into geoscience education. Now we test a group study for K-12 students based on concept of complex science such as cellular automaton, rythmical pattern study or simple analog experiment. Some students tried Montecarlo simulations and others made simple plate simulators.

Most of studies were carried out by the student with their own ideas, except for a few suggestions by a teacher.

-Example of experiments-

1. Three-dimensionized life game.
2. Subduction simulators using wood plate and rubber string.
3. A sand pile model using car fragrancner.

-Conclusion-

The merit of our study are as follows;

1. Surprise how simple rules produce complex phenomena.
2. Interactive study using games or analog models is fascinating for the students.
3. Computer friendly tactics drives students toward the science frontier.

Recently, geoscience as a subject at high school in Japan, goes on the way to extinction.

Our trial sugests that the approach from model to field, which is an inverse way of common tactics, can create new break through in geoscience education. Also, in the new subject of imformation science which will start in 2003, we should try to treat the models and simulations related to geoscience in it.