

# JUGI-JUGI : Chemical Education Program to Use Wearable Robot Hand

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The 'JUGI-JUGI' is a program that helps kids to start studying more chemically with games, cartoons, and wearable robotic arms. The program consists of three things: board games, molecular making, and virtual lab. First, in the board game, the learner can learn the common knowledge by solving the ox quiz as the game progresses, and also get simple information about atoms from hydrogen to calcium through short cartoon. learner can see long cartoon dealing with various scientific themes, as well as representative problems and application problems by chemical unit. second, in two step of molecular making program, The STEP1 of the Molecular making program is similar to a flash game, in this stage, user can create a molecule, and can see description of the molecule. In STEP2 tried to express the ammonia formation process geometrically. And moving the scroll bar will reveal the SP3 orbital. This step will continue to upgrade based on a proven formula or method. third, in Virtual lab, wearable robotic arms is used to catch the ball on the screen and make a simple game. Now I am in the process of implementing the laboratory in three dimensions. fourth. Creativity of the work is It combines science, engineering, and art, such as learning, games, cartoons, and robot arms, The subject of learning is expressed by the character of game, and, I tried to use the robot arm in the program to make the user create molecule in virtual and imagine a Creative thinking.